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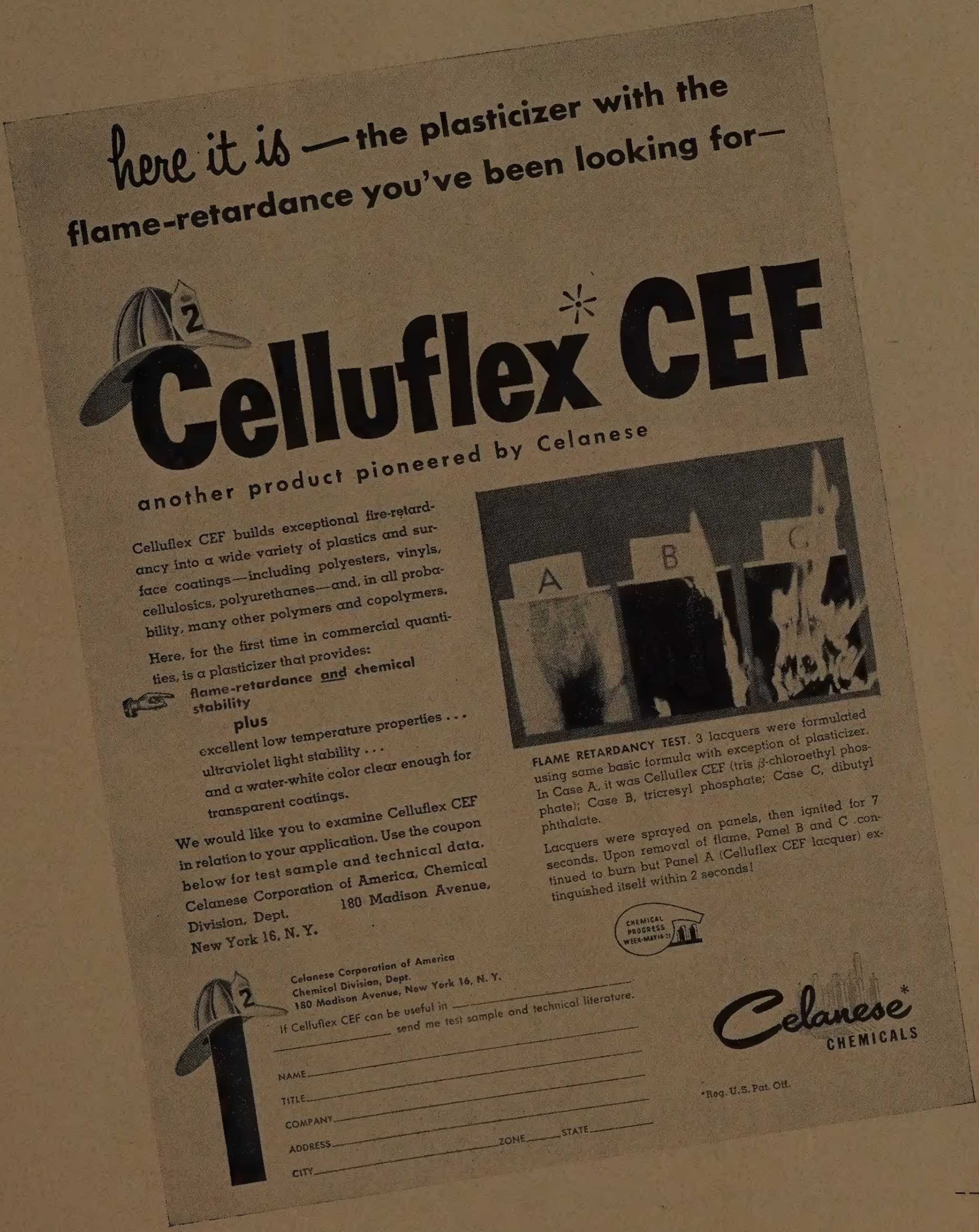

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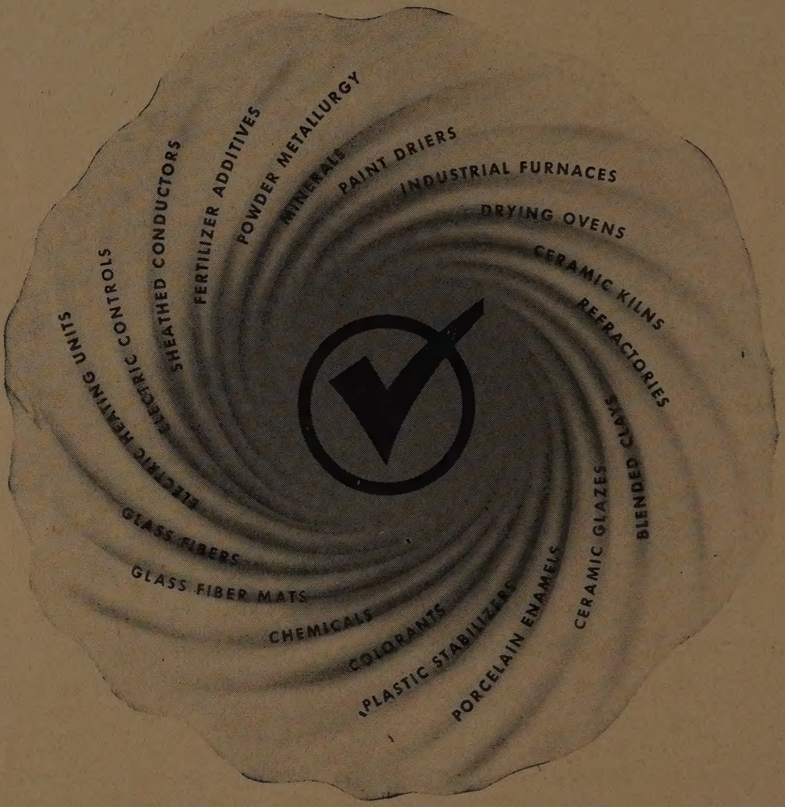

FIRST 6 MONTHS (1955) SALES & EARNINGS

Consolidated Sales . . . . $23,441,000 (up 18%)

Consolidated Net Profit after taxes . . $1,273,000 (up 47%)

Consolidated Net Profit per share . . $2.04 (vs. $1.39 in '54)

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The Analysts Journal

AUGUST
1955

Research-Minded Boston

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VOLUME 11
NUMBER 4

Webster's Dictionary defines research as "diligent inquiry or examination in seeking facts or principles; laborious or continued search after truth." The Oxford Dictionary defines research in similar fashion by stating it is "to search into a matter or to investigate closely." This narrative not intended to be scientific nor philosophical, is not based upon extensive examinations. It has not been approved by the Chamber of Commerce. It is a simple account of what has happened in Boston over a long period of time and an attempt to explain the background that has made Boston an outstanding leader in research. Research is carried on in many fields—in the academic, in the scientific, in the industrial, and in the financial and investment fields. In all of these, Boston has been a leader.

Boston more than a century and a half ago witnessed the creation of a group of wealthy capitalists. That was long before many cities which are great today were no more than Indian trading posts. The era of clipper ships and early cotton mills produced men who devoted their talents and efforts to taking care of accumulated wealth. Having passed the frontier stage, money became available for new business enterprises—academic developments, the advancement of medical knowledge, and exploration in many other fields that called for research as part of their programs. It is the normal cause of history that proficiency should flourish in such an atmosphere. Practical and theoretical research in Boston have marched side by side as businessmen backed the colleges and colleges, in turn, stimulated the "continued search after truth."

The first and best-known example of analysis in the investment field is found in the Boston trustee. Whereas the inquiry he conducted in the early years before deciding where to place his accumulated capital differed greatly from the research that is carried on today, it did have one common fundamental: The Boston trustee insisted upon knowing the management of the enterprise in which he placed money, just as the analyst today appraises management in the field.

Trustee management of money has been practiced in Boston ever since 1818, when the oldest corporate fiduciary was founded. The Massachusetts Hospital Life Insurance Company was formed in 1818 as a trustee for the purpose of managing investment funds. One hundred and thirty-seven years later, at the same location, 50 State Street, the Trustee through the Massachusetts Life Fund continues to manage money in trust. While its research practices have been modernized, its fundamental investment and trustee principles have remained constant.

Trustee of Massachusetts Life Fund has served the bequests of many famous persons. The value of continuous trustee management of money is perhaps best illustrated by the story of Benjamin Franklin's bequest to the City of Boston. In 1827, a $10,000 bequest was turned over to the Massachusetts Hospital Life Insurance Company. Subsequently approximately $5,000 additional was added to the original sum. From the income accumulated on this small amount the Trustee has paid to the managers of the Franklin Fund over $800,000—the fruit of 127 years of applied investment research. Today, there is a substantial balance still invested in Massachusetts

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Life Fund for further accumulation to carry on Franklin's wishes on the 200th anniversary of his death in 1990.

Over the years, Boston trustees continued to study the problems of investment and to develop new principles and techniques. In 1893, a group of distinguished citizens in Boston pioneering in the investment trust field formed the Boston Personal Property Trust. This closed-end trust has had a continuous, successful existence from that time and still provides a satisfactory investment medium for a number of investors. About ten years later, in 1904, Railway and Light Securities Company, that has now emerged as Colonial Fund, an open-end fund, commenced operations.

Research in the investment field was not confined in Boston solely to studies of industries and individual companies. Under the leadership of the late great Clarence W. Barron, the *Boston News Bureau* and the principle of accurate financial reporting of company and financial news was instituted in 1887, two years prior to the founding of the *Wall Street Journal.* Another interesting field of research was explored in 1902 by William Hamilton, emerging in the well-known Dow theory, which has claimed so many adherents.

To bring the story further up to date, the Harvard Graduate School of Business Administration in the 1920's under the leadership of Dean Wallace B. Donham, who had spent most of his business career as a vice president of the Old Colony Trust Company in Boston, began to spawn an increasing group of young men trained to study and research, dedicated to basing decisions upon a study of all the facts available. The men coming forth from the Business School abandoned the "by guess and by God" hunch approach that had dominated business thinking and decisions prior to that time. Many of the Business School graduates of the twenties were drawn into the field of investment research and accepted for their first position the glorious title and responsibilities of "statistician."

Immediately after World War I there was launched in Boston an organization based upon a new investment concept and devoted to research. This was independent Investment Counsel, pioneered by Scudder, Stevens & Clark. The concept of a business organization devoted exclusively to counseling clients as to what they should buy and sell, and the companion idea of a research organization of investment specialists searching for facts, was a revolutionary concept. It is not, however, surprising to recall that this organization was conceived and flourished in a research-minded community. The success of Scudder, Stevens & Clark attracted others to this new field and it is significant that the well-known investment counsel firm of Loomis-Sayles also originated in Boston.

At about the same time, a number of individuals who had been studying at the Harvard Graduate School of Business Administration concluded that it would be profitable to devote the investment theories studied there to the practical problems of investment management. In the early 1920's, State Street Investment Corporation and Massachusetts Investors Trust, the oldest and largest of the open-end funds, were formed to carry on the trustee concepts and to apply investment research to investment problems.

The flowering of the analyst did not occur until after World War II. A few statisticians in Boston in the thirties used to meet surreptitiously to talk over mutual investment problems because the jealousies of individual firms and the feeling that all research was highly secret caused the principals in the firms to issue orders that none of their staff were ever to lunch with any other individual in a different firm for fear that some trade secrets would be released. Shop talk was strictly taboo.

After World War II, conditions changed. Financial statisticians became analysts. The Boston Security Analysts Society was formed. At first its support came grudgingly from some of the older and more important research organizations, the idea caught on.

And it was found that Security Analyst Societies had been formed in Chicago and San Francisco and in New York prior to any official organization in Boston.

The Boston Society is very proud of its growth and of the research-mindedness of its membership. Four hundred strong, they look forward to the Ninth Annual National Federation Convention in Boston in May 1956 and to the opportunity to show off Boston as a research center.

All the country must share some of Boston's feelings about the research atmosphere because more than 25 of the leading open-end mutual funds in the country have their headquarters in Boston. In fact, a number of them in order to emphasize this quality have included the name "Boston" or "Massachusetts" in their title. It is rumored that one very well-known investment group decided a little more than a decade ago to move its organization from the "City of Brotherly Love" to the "Community of Research" in order to gain the lustre of Boston research and trusteeship.

No attempt has been made to trace the industrial research that is carried on by important corporations in this area or the scientific research conducted at Massachusetts Institute of Technology, or the consulting research at Arthur D. Little, Inc., and the National Research Corporation, or the continued research in the field of business at the Harvard Graduate School of Business Administration. In this community, study and research are carried on in many and varied fields. For those that are so minded, there are opportunities to explore the research at the Harvard Medical School or Massachusetts General Hospital, or the research into Russian thoughts or Oriental studies at Harvard. You can even explore research in the field of art at the Museum of Fine Arts.

Next spring in Boston at the Analysts' Convention, analysts will have an opportunity to see our research at work; to hear about its objectives and the practical values of works emanating from this research. They will visit "Research Row." Distinguished students from the academic and scientific fields will combine with practical research men from industry to broaden our vision and to give a glimpse into the future. We shall visit with many important investment research organizations and learn how in the land of the bean and the cod for many, many years investment research has been applied to investment problems and why Boston has achieved a national reputation for intelligent trustee management.

Kennard Woodworth

General Mills' 27th year

KEY FACTS FROM THE YEAR ENDING MAY 31

	1955	**1954**
Total Sales	$513,651,149	$487,587,179
Earnings	12,383,500	11,188,853
Dividends	8,413,402	6,709,116
Earnings Reinvested	3,970,098	4,479,737
Net earnings—per dollar of sales	2.4c	2.3c
—per share of common stock	5.02	4.50
Taxes per share of common stock	8.16	6.69
Land, buildings and equipment	65,289,183	55,922,943
Working capital	67,930,732	68,305,462
Stockholders' equity	123,156,558	120,645,593

HOW THE SALES DOLLAR WAS DIVIDED LAST YEAR

80.0¢ for raw materials, services

13.2¢ to employees

3.6¢ for taxes

1.6¢ to stockholders

.8¢ for future development

.8¢ for wear and tear

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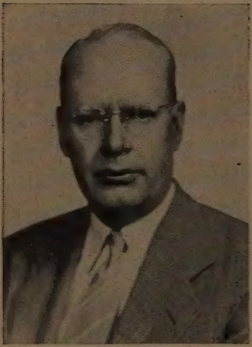

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SCHROEDER BOULTON is a partner of Baker, Weeks & Co., and heads their research department. His articles have appeared in many publications, and are accepted as authoritative, especially those concerning industrial shares.

O. K. BURRELL is professor of finance at the School of Business Administration, University of Oregon. He is a certified public accountant and the author of numerous articles on business and finance.

After being graduated from Princeton University in 1914 **DANIEL R. GOODWIN** went with the banking firm of Graham & Co. The army interrupted his investment career, but upon being released he joined H. M. Byllesby where he remained for 19 years. In 1940 he became a member of his present firm, W. H. Newbold's Sons & Co.

SANFORD GRIFFITH, an authority on Franco-German and Saar problems for thirty years, has served on several international commissions for the United States Government. He writes and lectures on this subject and acts as a consultant both here and abroad.

Graduated from Williams College in 1928 **EDWARD DOUGLASS HOWARD** soon became expert in the selection of special situation shares and other growth investments. His early affiliations were with Schoelkopf, Hutton & Pomeroy; Liberty Bank; and Brott & Templeton. In 1947 he joined Niagara Share Corporation as vice president in charge of research. His advice is in great demand and his articles widely read.

Recently **WILLIAM H. HUTT**, professor of business and Dean of the Faculty of Commerce, University of Cape Town, South Africa, was the guest of the Foundation for Economic Education at their conferences on economics and finance. There he gave several lectures on Co-ordination and the Price System, and the fallacies of Keynesian thought. His visit to the United States occasioned much interest as have his books and articles.

A student of finance, lecturer and writer **VAHE H. KENADJIAN** has long worked with Benjamin Graham. He has written articles for several financial journals and is presently associated with the Chase-Manhattan Bank of New York.

H. WILLIAM KNODEL, a senior analyst with Lionel D. Edie & Co., has written numerous articles for business and financial publications.

LOYD J. KIERNAN entered railway service in 1911, since which time he has been engaged in economic and transportation research. Articles of his have appeared in the Encyclopaedia Britannica. He was co-author and co-editor of Transportation in America.

to This Issue

Graduated from Yale in 1928 **GERSON D. LUBLIN** has spent his entire business life as a security analyst with investment firms. He was attached to the War Department Price Adjustment Board and engaged in renegotiation of war contracts. He is now a partner of H. Hents & Co.

AURELIUS MORGNER is on leave from the economics department of Texas A&M College to do a study on the relationship of other social sciences to economics. He has been on the faculties of the Universities of Missouri, Minnesota, and Northwestern.

NICHOLAS MOLODOVSKY of White, Weld & Co. has graduate degrees from Harvard and the University of Paris. He is the author of several books and articles on economics and stock market analysis.

A graduate of the Harvard School of Business Administration, **PAUL MURPHY** is now associated with Pennroad Corporation.

ROGER F. MURRAY was graduated from Yale and received his Ph.D. from the Graduate School of Business of New York University. He has spent his entire business career at The Bankers Trust Co., where he serves as Vice President in the Pension and Personal Trust Department. He has been appointed to conduct the seminar in Investment Management Problems at the Graduate School of Business, Columbia University.

Professor of Economics at Ohio University, **FRED PICARD** specializes in Public Finance and Economic Thought and Theory. He also gives courses in accounting; is a director of the Ohio Economic Workshop.

ALEXANDER PINNEY one of the senior partners of Craigmyle, Pinney & Co. has devoted thirty-five years to investment finance. He is a director in several large corporations.

For many years **LEWIS WILCOXEN** has been on the staff of the City Engineers Office, Detroit, Michigan. Earlier in his career he was assistant to Thomas A. Edison. A graduate of Michigan University in Civil Engineering; and of Wayne University where he received his M.A. degree in economics.

KENNARD WOODWORTH, president of the Massachusetts Hospital Life Insurance Company, was the first president of the Boston Society of Security Analysts, as well as president of the National Federation of Financial Analysts Societies. Since his graduation from the Harvard School of Business Administration, as a student of economic and investment values, articles by him have been read by financiers everywhere.

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Transatlantic Telephone Cable Is Now Being Laid

New underseas telephone system will provide enlarged and improved service between this country and Great Britain

LAYING THE CABLE. This is the world's largest cable-laying ship — *HMTS Monarch* — now engaged in laying the first telephone cable across the Atlantic. Note special cable-laying gear at the bow. Ship's huge storage tanks can carry 1800 nautical miles of cable.

A history-making voyage is now under way—to place a twin telephone cable system under the Atlantic Ocean.

The world's first transoceanic telephone cable is being laid from this continent to Great Britain this summer. The second cable will be laid next year.

When both cables are completed—each transmits speech in only one direction—people in this country can talk with those in England under the Atlantic Ocean for the first time. Present service is by radiotelephone.

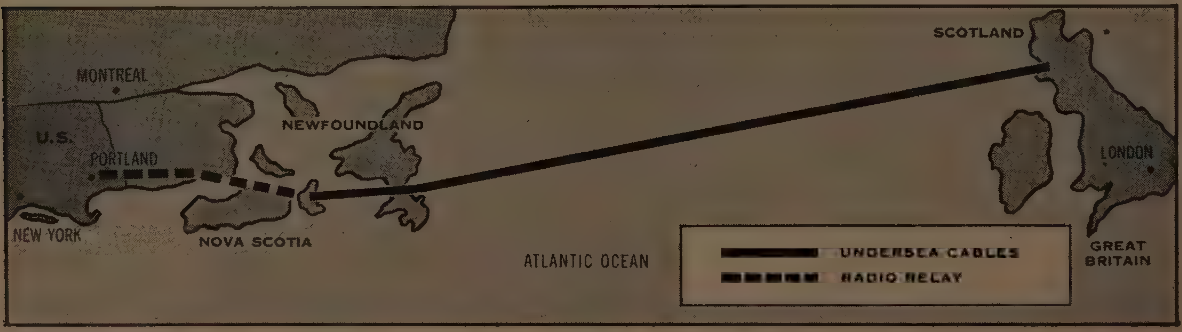
The new cable system is the culmination of many years of planning, invention and development. The major problem was to build amplifiers right into the cable which could withstand the enormous pressure at the bottom of the ocean and operate without attention for years.

These deep-sea amplifiers have been designed by Bell Telephone Laboratories and made to new standards of manufacturing care and quality by Western Electric.

Telephone service across the Atlantic will be improved and enlarged by the new system which is a joint undertaking of the Bell System, Canadian Overseas Telecommunication Corporation and the British Post Office. The 36 cable circuits can operate full time and will be free from disturbances which affect radio.

This new era of improved service and reliability will benefit not only individuals and business but will be of far-reaching value in national defense.

BELL TELEPHONE SYSTEM



The Keynesian System

WILLIAM F. HUTT

THE PUBLICATION OF KEYNES'S *General Theory* in 1936 dealt a staggering blow to the authority of orthodox economics. It did so at a crucial point in world history, when the accumulated wisdom of two centuries of disinterested, dispassionate thought on economics was needed as never before. Keynes had, perhaps, merely attempted to stir up a healthy controversy on the issues concerned. If that *was* his aim, the effect was unintended sabotage. For few of those who read his book were in a position to understand his technical arguments, yet they could understand the ironic, even scornful strictures on orthodox teachings with which the book abounded.

Moreover, in a sick world for which previous economists had been prescribing—without avail—a dose of castor oil (i.e., price and wage-rate adjustments which would have permitted non-inflationary expansion), Keynes prescribed champagne—cheap money. This delightful prescription, accompanied as it was by both misrepresentations and ridicule of the orthodox (castor oil) physicians, was eagerly accepted by the politicians. That is not surprising.

What *is* surprising is the extent to which it has since captured the world of academic economics teaching. Several factors may account for this; but first and foremost the blame rests on the fact that Keynes chose his concepts and definitions so as to prevent recognition of, and so to exclude from consideration, what should have been the most vital issues. The Keynesian system seems tacitly to dismiss the main factor relevant to the sociologically difficult and politically unpopular tasks towards which orthodox teaching appeared to be pointing.

"KEYNESIAN REVOLUTION"

The "Keynesian Revolution" so caused has, however, been subject to a gradual counter-revolution. Since 1936, almost every original doctrine which Keynes introduced has been refined or amended to the point of abandonment *by would-be Keynesians.* Curiously enough, the retreat has come about largely through the medium of works which have been trying to explain that Keynes did, in fact, establish a new economics or cause a permanent revolution. Looking back on all these attempts to show what Keynes really meant, or what Keynes ought to have meant, it becomes obvious that his *General Theory* must be almost unique in scientfic literature in the number of fallacies which were early discovered within its pages. And yet it became a controlling contribution of its epoch and continues to dominate academic thinking today.

In an article in the South African Journal of Economics (March, 1954), entitled, *The Significance of Price Flexibility*, the gradual elimination of the grounds for the Keynesian contention was traced, and it was indicated that, in maintaining or increasing wage-rates, we are maintaining or increasing consumer demand, creating a justification for new investment and so maintaining or increasing employment. Keynes's theory of interest, which, at the outset, was regarded as the keystone of the Keynesian arch, seems to have been quietly discarded. Indeed, it is almost possible to say now that what was new in the *General Theory* was wrong, and that what was right in it was not new. But books continue, on the whole, to be written as though the foundations of Keynesianism remain unshaken; and in the meantime the economic policies of many countries have been built on those disastrously defective foundations.

Lectures have been devoted to a criticism of two notions which have not yet been wholly eradicated by the Keynesians themselves, namely, "the multiplier" (on which Keynes himself placed the strongest emphasis) and the "acceleration principle" (which has been developed rather by Keynes's disciples, and which had been discussed long before Keynes wrote).

"THE MULTIPLIER"

"The multiplier" theory asserts that, in an economy in which unemployment exists, any increase in aggregate money expenditure directed to "investment" will have multiplied effects upon "income." The extent of this multiplication, it is said, depends on the ratio in which people tend to distribute the expenditure of an additional amount of income between consumption and saving (which is supposed to rest on a "psychological law"). Thus, if 4/5ths is spent on consumption, the original increase in money expenditure must (it is contended) multiply itself by 5 in its effects upon "income." This is subject to the proviso that the original increase is not *saved.* For savings are supposed to result in "leakages" as a result of which the beneficent multiplier tendencies are allowed to escape. It was in the course of his discussion of these points that Keynes was led to his famous gibes at financial prudence and thrift.

The multiplier effects are thought to be greatest, the more spendthrift people happen to be. Thus, to keep to the above example, an initial additional expenditure of $1,000 causes an increase of $5,000 in "income," through the first recipient spending $800 on consumption, the next recipient spending $640 on consumption (out of the $800), the next recipient $512, and so forth. The effect dwindles because one fifth is assumed always to be saved. The expenditure of this sum on "investment" is supposed to have no multiplier effect.

This theory appears to be wholly wrong, and the effects of additional expenditure are identical whether the initial or subsequent expenditures are on goods for consumption or goods for investment. The conclusion is that any "multiplier" effect *upon money income* must be due solely to the effects of changed expectations upon the demand for money assets (the income velocity of circulation), and any "multiplier" effect *upon real income* must be due solely to the extent to which "withheld capacity" is released as a result of the initial expenditure and its repercussions upon income velocity. ("Withheld capacity" is productive power which is idle because its services are priced higher than people can *afford to pay*, or higher than they are *willing to pay*—in relation to what they expect prices to be in the future.)

The "acceleration principle" states the thesis that an increase in consumption induces a much greater rate of increase in "investment," so that activity in the "constructional industries" is a function of the *rate of growth* of consumption. It is argued that this is a serious source of instability which only centralized control of expenditure, etc., can rectify. This writer holds the theory is false and worthless. Firstly, productive power grows, or is replaced, in response to saving and not in response to consumption, although *predicted* "consumption demand" (for particular final products) determines the *form* (as opposed to the *rate*) of growth or replacement of capacity to produce. Secondly, the accelerationists have blundered logically in comparing a percentage increase in the flow of products (which they describe as an "annual increase," although it is the same rate of increase per month, week or day!) with the increase in the additional capital resources needed to produce that increased output, while *assuming* that the provision of these resources will be concentrated into one year. They ignore, or else treat skimpily or incompletely, the real factors which lead to the concentration of the provision of capital resources over time.

But the multiplier and acceleration discussions are strewn with far too many errors for exposure in this short article, where it has been sought merely to indicate broadly the nature and main lines of criticisms.

It would be naive to think that criticisms of the foundations of Keynesian thinking will affect the current Keynesian policies of which they formed the initial justification. The reactions, if any, are more likely to come through the recognition that the controls implied by the so-called "full employment" policies are leading slowly towards a totalitarian society, and through the recognition that the continuous inflation which has in the past proved so popular so often, may soon cease to solve the politicians' problems. For when the masses eventually awaken to the fact that the perpetual depreciation of their money unit is deliberate policy, then they will cease to believe the official spokesmen whose duty it is to deceive them, then every inflation will immediately become a runaway inflation as far as its expected destination.

* * *

"A Government can live for a long time, even the German or the Russian Government, by printing paper money. That is to say, it can by this means secure the command over real resources,—resources just as real as those obtained by taxation."
—*Monetary Reform, J. M. Keynes*

"Saving is the act of the individual consumer and consists in the negative act of refraining from spending the whole of his current income on consumption."
—*A Treatise on Money, J. M. Keynes*

"From this analysis follow Keynes' main recommendations for fiscal policy:

1. Pursue a policy of low interest rates.
2. Supplement private investments by public outlays.
3. Devise a progressive tax system that falls more heavily on the portion of income that is saved than on the portion that is spent and thereby counteract the decline in the propensity to consume."—*Gerhard Colm, The New Economics*

Union Electric expansion program revised upward

$400 Million 15-year Program becomes $600 Million as Demand for Electric Power Grows in St. Louis Area

In 1947, after war restrictions were off, Union Electric announced postwar plans which anticipated spending $400,000,000 for expansion over a projected period of 15 years. By the end of 1954, Union Electric already had spent $245,150,000 and had moved estimates for the remainder of the 15-year period sharply upward.

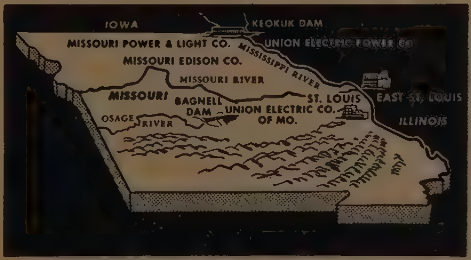
$232 Million by 1959

To meet the needs of St. Louis area industry, Union Electric now expects to spend an additional $232,000,000 in the next 5 years. And at the present rate of industrial expansion, there is every reason to believe that by 1962 Union Electric will have invested $600,000,000 in expansion . . . an increase of 50% over the original $400,000,000 program. Our faith in the future of our area, which is attested by such a substantial program, was fully justified with the passage of a $110,639,000 "modernization" bond issue on May 26. Thus St. Louis will become even more attractive to industry and individuals. This city bond issue also unlocks up to $335,000,000 additional in State and Federal funds for civic improvements and, it is estimated, will bring about approximately $350,000,000 worth of new privately financed construction in connection with the program. Thus, well over $750,000,000 will be spent for slum clearance, low-cost housing, high-speed downtown expressways, parks, playgrounds, new buildings . . . complete city modernization and industrial and commercial expansion.

Growing Industrial Area

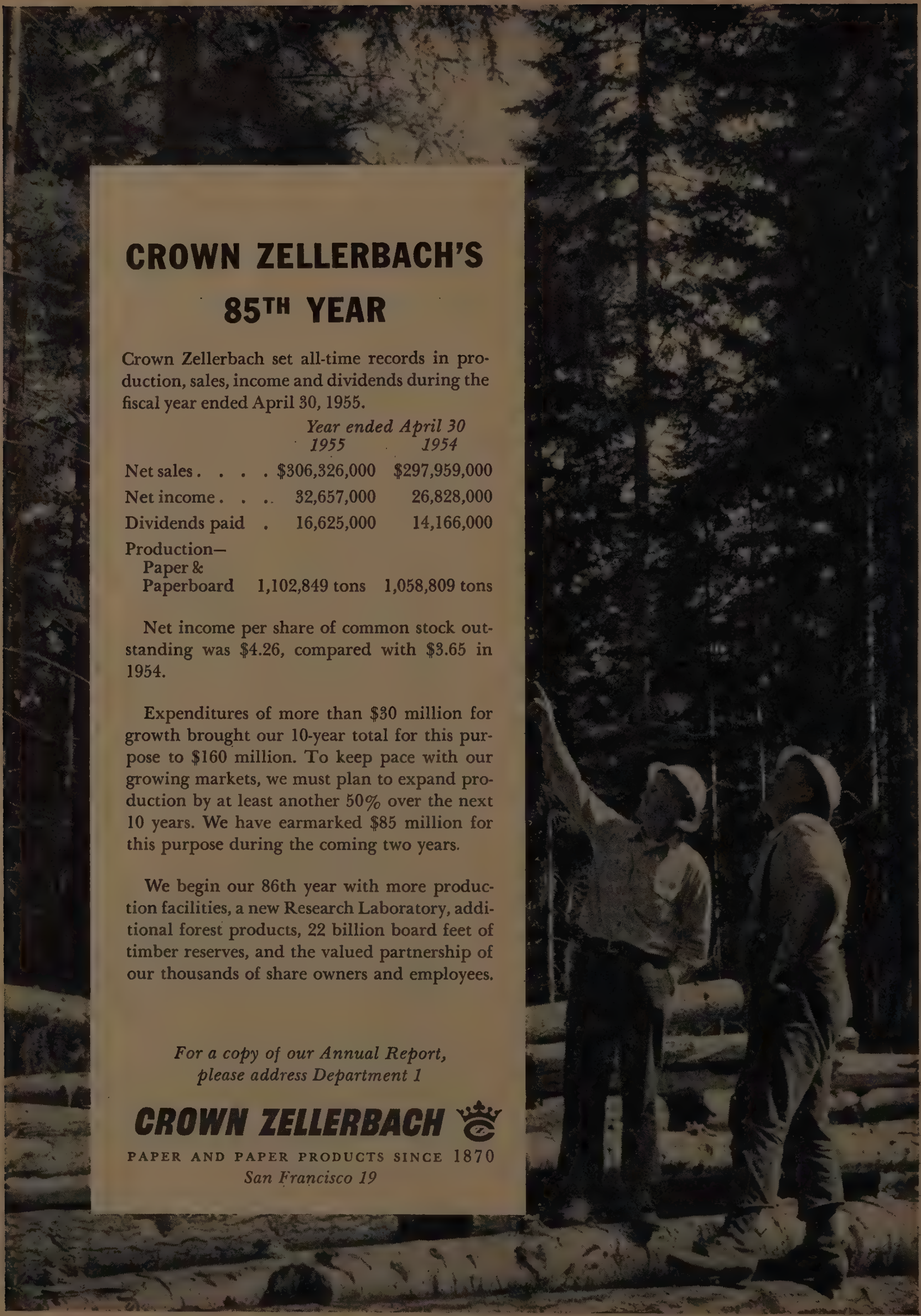
The 1954 Industrial Census shows a net gain of 324 new industrial plants in this area between 1947 and 1953. Additional varied and advantageous facilities and industrial sites are now being developed to keep pace with St. Louis' growth and development. Should you be interested in investigating the industrial site advantages anywhere in Union Electric's 16,000 square mile territory, we shall be happy to supply information you need to evaluate such a move.

All requests will be treated confidentially. Please address inquiries to: J. E. Johanson, Industrial Development Engineer, 315 North 12th Street, St. Louis 1, Missouri.



UNION ELECTRIC COMPANY OF MISSOURI

Subsidiaries: *Union Electric Power Company • Missouri Power & Light Company • Missouri Edison Company • Union Colliery Company • Poplar Ridge Coal Company • St. Louis & Belleville Electric Railway Company.*



CROWN ZELLERBACH'S

85TH YEAR

Crown Zellerbach set all-time records in production, sales, income and dividends during the fiscal year ended April 30, 1955.

	Year ended April 30 1955	*Year ended April 30* 1954
Net sales	$306,326,000	$297,959,000
Net income	32,657,000	26,828,000
Dividends paid .	16,625,000	14,166,000
Production— Paper & Paperboard	1,102,849 tons	1,058,809 tons

Net income per share of common stock outstanding was $4.26, compared with $3.65 in 1954.

Expenditures of more than $30 million for growth brought our 10-year total for this purpose to $160 million. To keep pace with our growing markets, we must plan to expand production by at least another 50% over the next 10 years. We have earmarked $85 million for this purpose during the coming two years.

We begin our 86th year with more production facilities, a new Research Laboratory, additional forest products, 22 billion board feet of timber reserves, and the valued partnership of our thousands of share owners and employees.

For a copy of our Annual Report,
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CROWN ZELLERBACH
PAPER AND PAPER PRODUCTS SINCE 1870
San Francisco 19

What Yield Do You Use?

ROGER F. MURRAY

IN RECENT YEARS, PARTLY as a result of the emerging importance of institutional investing on a long-term yield basis, increasing attention has been given to the matter of the rate of return which common stocks provide. Commentators on the subject make frequent comparisons with the yields provided by fixed-income securities. Few of these comparisons seem precise or reliable, especially when long periods of time are involved. The indicated returns on the traditional stock averages are well known, and each investor is also free to use his own portfolio results. But with what should they be compared?

THE OBJECTIVES

Some sort of a basic rate is sought primarily to supply a long-range perspective on the market's valuation of earnings and dividends. Benjamin Graham's concept of a central value, for example, is based on capitalizing average earnings at twice the yield on high-grade bonds. To have the results of this computation consistent, in the sense of having the same meaning over a long period of years, the bond yield employed should represent in 1955, as closely as possible, what it represented in 1935 and 1925.

The interest of other observers of the securities markets lies in the stock-bond yield ratio, not only because of current selections which they must make from different media, but also for the reason that on *some* occasions in the past a forecasting significance has been attached to the relationship. For the purpose of making these observations, the most serviceable bond yield is presumably the one which was most realistic in the minds of the most important investor groups on most of the occasions studied.

SOME POSSIBLE CANDIDATES

The yield on U. S. Government bonds lays claim to being the "basic" rate; but at various times it has been greatly distorted by partial tax exemption, lack of long maturities, pegged markets, institutional factors, etc. Furthermore, elements in the yield such as risklessness, liquidity, and shiftability certainly are quite unrelated to a long-term investment return. State and municipal bonds share some of the same disabilities, plus the impossibility of determining the composite tax bracket of equity investors in order to place their return on a comparable basis.

As a result, the most widely used figure has been the yield on a group of high-grade corporates, such as Moody's AAA or Standard & Poor's A1-bonds. These are both good selections of large issues of the best quality as priced in the distributed market. In the 1920's, these averages became representative because both investing institutions and individuals were actively participating in this market. Under present conditions, we know that these quotations are really odd-lot prices in relation to the aggregate volume of corporate bond activities of the thrift institutions.

In the first place, the important investors in corporate bonds operate primarily in new issues. The yield concession from the distributed market may be very small in a firm market (our studies show an average differential of only 6 basis points in 1954 for electric utility bonds of AA grade). However, in a hectic market like that of 1953, new issues of AA quality produced an average yield premium over distributed issues of 22 basis points and as much as 35 basis points in the critical month of June 1953. Yet even this does not fully measure the recent understatement of effective bond yields by the conventional averages. Over several years, direct placements of high-quality issues have produced an additional 10 to 15 basis points. Since pension funds and life insurance companies can do a significant volume of investing in this manner, the additional yield premium deserves recognition.

The preceding discussion relates primarily to bonds in the AA and AAA categories. The stocks whose rates of return are being compared do not necessarily consist wholly of the strongest investment issues. A good case could be made, therefore, for using a modestly lower standard of bond quality. If marketability is also conceded to be an extraneous factor, the yield on the general run of direct placements would make a suitable comparison.

Although such rates may be significant to institutional investors today, there are no data available to carry the yield series back a decade or more. Thus, we must admit defeat in the search for a consistently comparable bond yield which is entirely suitable for these special purposes. This is a particularly valid judgment if the intention is to make some rather close calculations at specific market levels which may be separated by long periods of time.

PREFERRED STOCK YIELDS

It is probable that the real difficulty is that we are looking for an abstraction: some sort of a going rate of return, a perpetual contractual yield which is influenced only by the relative scarcity or abundance of funds in the capital markets. There is no place that we can turn to find such a yield pattern over a long period of time. It may be, however, that the closest approximation is to be found in the market for high-grade preferred stocks. Without attempting to argue whether this will continue to hold true in the future, I should like to suggest that from 1955 back to 1920, a preferred stock yield series might give the *least* inaccurate long view of the fixed-income yield to which common stock values may be related. Since this conclusion is neither widely shared nor free from some reservations, let us examine some of the pros and cons.

In favor of using the return on high-grade preferred stocks there are several significant points. The yields from a composite of high-grade noncallable industrial preferreds on which the payment of dividends has never been in question represent a perpetual return on securities which have no maturity, no high degree of liquidity, little shiftability, and substantially unchanging investor acceptance over the yields. It is frequently stated that in recent years the tax advantage to corporate holders has greatly reduced the yield. This seems doubtful. According to the recent SEC estimates, considerably less than one-quarter of the net purchases of preferred stocks in recent years have been made by investors who pay a full corporate tax. These same investors apparently owned less than 10% of the outstanding issues at the end of 1954. Furthermore, preferred stock dividends afford only the same tax benefit as that provided by common stocks through the 85% dividend credit. It seems clear that if this influence were really important to sufficiently large aggregations of capital, there would have been more of a shift in ownership.

PRINCIPAL ARGUMENT

The principal argument against using high-grade preferred stock yields is that they represent a small, relatively inactive segment of the securities markets. The issues which we have used in constructing an index of six high-grade noncallable industrial preferreds going back to 1922 (with only two substitutions in the entire period) have a current market value of only $360 million. Nevertheless, it may be argued that these well-known, highly regarded stocks are sensitive to the full force of a wide range of influences in the capital markets.

This does not purport to be an airtight case for using preferred stock yields. Since the selection of the best measure is a matter of judgment, rather than something which can be demonstrated with statistical precision, the purpose of this article has been merely to suggest the thought that this might be the "least inaccurate" base from which to measure the adequacy of common stock earnings yields or dividend yields in comparison with prior periods. In any event, it seems worthwhile to emphasize the shortcomings of the bond averages which are customarily used with little regard for their changing significance.

WHAT'S THE DIFFERENCE?

The natural question about a proposal to substitute the return on preferred stocks for the traditional bond yields is: What difference would it make? Obviously there are many purposes for which the yield comparisons are made, and there is no general answer to the question. However, it is clear that the difference is significant over a period of years as shown in the following tabulation:

High-Grade Noncallable Industrial Preferred Stock Yields as a Percentage of Moody's AAA Corporate Bond Yields

(Annual Averages)

Year	*Percentage*	*Year*	*Percentage*
1922	112	1939	133
1923	115	1940	139
1924	116	1941	142
1925	116	1942	146
1926	116	1943	144
1927	114	1944	142
1928	108	1945	138
1929	106	1946	137
1930	106	1947	142
1931	106	1948	145
1932	114	1949	146
1933	117	1950	144
1934	121	1951	141
1935	122	1952	137
1936	129	1953	130
1937	132	1954	134
1938	130	June 1955	126

Without going into an analysis of the specific reasons for the size of the yield differentials under various circumstances, these figures speak for themselves in raising serious doubts as to the validity for long-term comparisons of the widely employed high-grade corporate bond averages.

* * *

> "To compute either bond yields or stock yields, assumptions must be made concerning future payments. The computer of stock yields usually assumes that payments in the future will be at the same annual rate as they were in the immediate past. Having made this totally unwarranted assumption, he plunges into refinements."
>
> "A pronounced fall in the price of bonds actually outstanding is serious not only because it destroys present purchasing power, but also because it leads to one of the vicious circles of the business cycle. If the bonds have been used as collateral for loans, that collateral must be increased or a part of the loan must be repaid. If it be repaid by selling some of the bonds, such 'distress selling' tends to lower the price of the bonds just as directly as does the forced selling of any commodity. Contrary to ordinary economic assumptions, things are being sold, not because they are dear, but because they are cheap."
>
> *The Movements of Interest Rates, Bond Yields and Stock Prices in the United States Since* 1856, *Frederick R. Macaulay.*

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1909 Blue Ribbon Holder, H.M.S. Mauretania, held the North Atlantic speed record for 22 years. Like every Blue Ribbon winner since, she was protected by the *makers of Mobiloil!*

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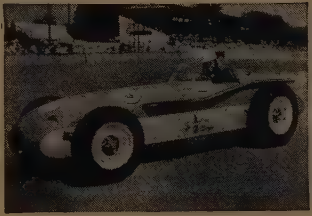
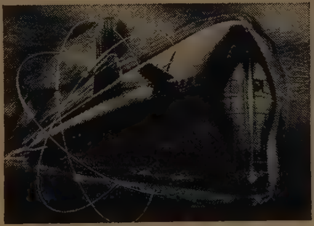


1955 Indianapolis Winner, Bob Sweikert, averaged a sensational 128.209 mph to win this 500-mile classic. He relied on *Mobiloil*—first choice of more drivers than any other brand.



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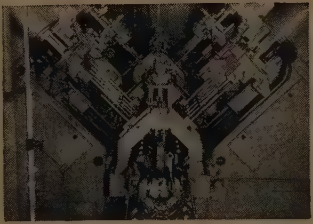

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The Relative Vulnerability of Growth and Income Stocks

EDWARD DOUGLAS HOWARD

COMMON STOCK PRICES have had a long advance and stocks of strongly growing companies have, as expected, risen much more than income stocks. The question arises, in discussions with investment committees or clients, as to the advisability of concentrating new investments in the latter group or even switching into this group. Much of the research for this article was done under the direction of Eugene J. Pratt, assistant director of Niagara's Investment Research.

Table 1 is based on the market record of certain of the Standard & Poor's group averages in the 1936–41 and 1946–mid 1950 periods. The industries are divided into growth and income groups with those of the former whose products were subject to wide price changes further segregated. Table 2 indicates the changes in product prices affecting this latter group. We believe the conclusion to be quite apparent that, barring the effect of commodity price weakness, both groups were equally vulnerable to price decline but that the growth groups had substantially greater recoveries.

Table 1. Standard & Poor's Group Price Indices

	1936 - 1937 H	1937 - 1938 L	Pre-War Recovery	1946 H	1946 - 1949 L	Pre-Korea Recovery
Growth Groups						
Aluminum	100	48.9	96.8	100	67.2	94.0
Chemical	100	58.0	93.9	100	78.2	121.4
Ethical Drugs	100	67.7	102.3	100	67.4	112.1
Office Equipment	100	55.5	73.0	100	75.0	129.8
Growth-Commodity Groups						
Oil	100	*	*	100	83.7	116.9
Paper	100	33.5	63.3	100	70.2	127.1
Rayon	100	39.2	71.1	100	63.0	106.2
Income Groups						
5c-10c-$1 Stores	100	54.9	72.8	100	74.2	89.3
Food Chains	100	41.5	94.1	100	66.7	102.4
Packaged Foods	100	55.5	80.2	100	64.2	84.2
Telephone & Telegraph	100	66.7	90.2	100	68.8	79.4
Tobacco	100	67.0	84.6	100	73.9	88.8
Utility Op. Cos.	100	57.4	82.2	100	70.0	89.2

*The oil group did not recover from the 1938 lows but continued downward to mid-1940 when it reached 45.6% of its 1937 high. It then recovered to 59.6% in 1941.

Table 2. Wholesale Price Indices

(U. S. Dept. of Labor)

Monthly Averages — 1926 = 100

	1936	1937	1938	1939	1940	1941
Paper	80.7	91.7	85.0	82.4	91.7	98.2
Petroleum & Products	57.3	60.5	55.9	52.2	50.0	57.0
Rayon	31.8	33.3	28.9	28.8	29.5	29.7

	1946	1947	1948	1949	June 1950
Paper	119.4	155.1	168.5	160.8	155.6
Petroleum & Products	67.5	90.2	122.1	112.2	113.9
Rayon	30.7	37.0	41.2	40.5	39.9

As one does not, however, buy "averages", and because price action is not the only measure of relative performance, Tables 3, 4 and 5 were prepared to study the relative price, earnings, and dividend performances of a sample of individual stocks. The inclusion or omission of any company is always controversial. Selection was based on the stock of the company being publicly held in the pre-war, post-war, and present periods and its being accepted as a growth or income issue in at least two of these periods. The paper and office equipment groups' growth was probably not recognized in the thirties. Rayon is probably not so considered now. To facilitate comparison, index figures are shown.

In comparing price action, the same conclusions are reached as in the preceding tables. They all went down about the same amount but those with stronger growth characteristics recovered faster. The story on earnings and dividends was, however, quite different. The relative stability of the income group's earnings and dividends in 1938 and the gains by the food group in that year were outstanding. However, by 1939 growth had reasserted its position of leadership.

Turning to the post-war period, the slump that finance expected in 1946 did not materialize until 1949 and was then relatively mild. The greater gains in earnings and dividends of the growth groups again endorsed their desirability as investments.

THE PRESENT SITUATION

While we can learn from past experience, things are never the same in successive periods. Study of the past periods indicates that growth stocks have had about the same price vulnerability as income stocks but greater recovery; that in a period of industrial recession earnings of the latter group have held up better, although here again the growth stocks have gone on to new highs more rapidly; and that dividends of the income stocks have had greater stability. Some questions that may be asked at this time are:

1. Has the growing appreciation of the merits of growth stocks in recent years driven their prices to levels that are more vulnerable, relative to the other groups, than in the past?

Table 3. Indices of Individual Stock Prices

Growth	1936 - 1937 H	1937 - 1938 L	Pre-War Recovery	1946 H	1946 - 1949 L	Pre-Korea Recovery
Dow	100	49.4	106.7	100	68.8	161.5
Du Pont	100	48.9	102.4	100	70.9	150.4
Hercules	100	48.2	114.4	100	55.4	83.0
Monsanto	100	62.4	110.5	100	76.6	118.6
Union Carbide	100	51.4	84.8	100	70.6	122.5
Abbott	100	65.0	137.0	100	70.1	120.9
Merck	100	47.1	264.7	100	56.3	163.1
I.B.M.—Worldwide	100	68.6	119.6	100	76.7	186.0
National Cash—Worldwide	100	33.3	79.5	100	67.4	104.3
Aluminum Ltd.	100	40.0	107.4	100	68.4	84.2
Crown Zellerbach	100	29.7	84.2	100	49.7	90.1
Scott	100	75.0	114.1	100	63.7	161.3
Continental Oil	100	32.7*	61.2	100	68.0	144.0
Phillips	100	40.2	74.1	100	69.0	108.0
Shell	100	22.1*	47.8	100	54.5	104.5
Standard Oil of Indiana	100	44.0*	68.0	100	72.0	108.0
Standard Oil of New Jersey	100	41.0*	61.5	100	76.3	118.4
Income						
Baltimore Gas & Electric	100	59.5	90.7	100	60.5	89.3
Cleveland Electric	100	58.1	93.3	100	70.8	100.0
Commonwealth Edison	100	59.0	95.0	100	69.2	91.7
Consolidated Edison	100	34.0	70.2	100	58.3	93.4
Detroit Edison	100	49.8	82.1	100	78.4	94.1
Pacific Gas & Electric	100	53.8	86.6	100	64.0	81.0
A. T. & T.	100	58.4	92.2	100	68.9	80.8
General Foods	100	51.7	111.6	100	60.6	90.9
Kroger	100	44.6	123.2	100	61.5	103.8
National Biscuit	100	40.0	72.9	100	65.8	105.6
National Dairy	100	40.7	65.5	100	54.7	99.4
American Tobacco	100	55.1	85.0	100	54.1	76.6
Woolworth	100	47.9	76.1	100	67.2	81.6

*Low in 1940

Table 4. Indices of Earnings Per Share

Growth	1936	1937	1938	1939	1946	1947	1948	1949
Dow	108	100	96	176	100	161	198	244
Du Pont	103	100	52	105	100	105	139	192
Hercules	102	100	65	122	100	146	122	110
Monsanto	91	100	53	91	100	151	167	158
Union Carbide	86	100	58	80	100	130	174	157
Abbott	88	100	98	112	100	95	103	93
Merck	108	100	14	165	100	107	152	129
I.B.M.—Worldwide	93	100	107	113	100	126	150	177
National Cash—Worldwide	74	100	62	47	100	227	306	243
Aluminum Ltd.	21	100	134	191	100	136	233	230
Crown Zellerbach	68	100	67	153	100	128	129	115
Scott	78	100	104	122	100	149	203	298
Continental Oil	68	100	37	45	100	163	277	184
Phillips	74	100	38	41	100	150	267	164
Shell	109	100	51	53	100	182	338	232
Standard Oil of Indiana	84	100	50	61	100	140	207	152
Standard Oil of New Jersey	66	100	52	61	100	160	220	161
Income								
Baltimore Gas & Electric	97	100	87	106	100	87	71	86
Cleveland Electric	97	100	95	104	100	87	93	98
Commonwealth Edison	82	100	114	117	100	103	92	112
Consolidated Edison	108	100	96	102	100	100	104	100
Detroit Edison	108	100	78	97	100	105	98	114
Pacific Gas & Electric	94	100	92	104	100	93	95	81
A. T. & T.	101	100	85	104	100	74	94	91
General Foods	154	100	142	155	100	84	112	126
Kroger	119	100	127	187	100	111	109	125
National Biscuit	106	100	109	103	100	138	136	129
National Dairy	132	100	111	124	100	76	83	109
American Tobacco	74	100	97	101	100	96	127	133
Woolworth	98	100	86	88	100	105	109	93

Table 5. Indices of Dividends Per Share

Growth	1936	1937	1938	1939	1946	1947	1948	1949
Dow	100	100	100	100	100	110	140	165
Du Pont	97	100	51	112	100	114	139	194
Hercules	84	100	50	95	100	133	150	173
Monsanto	100	100	67	100	100	185	185	185
Union Carbide	81	100	63	63	100	133	183	200
Abbott	92	100	82	105	100	113	118	125
Merck	43	100	14	100	100	109	146	143
I.B.M.—Worldwide	95	100	104	110	100	100	117	123
National Cash—Worldwide	90	100	80	80	100	200	206	223
Aluminum Ltd.	No Dividend Paid 1936-1938				100	112	148	144
Crown Zellerbach	0	100	66	132	100	133	133	133
Scott	69	100	116	118	100	109	127	146
Continental Oil	83	100	67	67	100	147	206	235
Phillips	91	100	73	73	100	126	153	153
Shell	27	100	71	51	100	150	200	200
Standard Oil of Indiana	104	100	44	54	100	114	121	114
Standard Oil of New Jersey	81	100	61	53	100	134	69	142
Income								
Baltimore Gas & Electric	100	100	100	100	100	100	100	100
Cleveland Electric	100	100	100	100	100	100	109	112
Commonwealth Edison	80	100	86	106	100	100	102	109
Consolidated Edison	88	100	100	100	100	100	100	100
Detroit Edison	100	100	100	100	100	107	110	110
Pacific Gas & Electric	81	100	100	100	100	103	105	107
A. T. & T.	100	100	100	100	100	100	100	100
General Foods	112	100	100	112	100	100	100	112
Kroger	119	100	119	157	100	120	120	140
National Biscuit	100	100	100	100	100	167	167	167
National Dairy	100	100	83	67	100	109	109	133
American Tobacco	100	100	100	100	100	107	115	123
Woolworth	100	100	100	100	100	119	119	119

In an attempt to answer this question, Tables 6 and 7 have been prepared. It is not believed that over-all averages of the groups would be trustworthy due to the wide variances within them and the inevitable weighting. It is believed, however, that careful inspection will indicate that, with due allowance for the changed investment standing of some of the companies, their *relative* positions have not greatly changed. For example, the relative price/earnings ratio of the chemical and electric utility groups was 28.2/18.9 in 1937; 22.4/17.2 in 1946; and 25.6/16.5 now — 1.50; 1.30; and 1.56 respectively. Similarly, comparing the oil and food groups, we find ratios of 1.08; 0.90; and 0.92.

Relative yield relationships between the electric utilities and chemicals have been 1.45; 1.96; and 1.96. The higher chemical dividends in 1937 were, no doubt, due to the credit for dividends paid allowed against income for surtax purposes in this period. That of the foods to the oils was 1.28; 1.09; and 1.19.

It cannot, therefore, be said that relative vulnerability has been greatly increased.

2. On the other hand, can we expect greater dividend stability in the growth group in a future recession?

It would appear quite possible. As shown in Table 8, dividends were a relatively high percentage of earnings in 1936 and 1937, particularly when compared with the present, for the reason referred to above. In more recent years, capital needs and the confiscatory effect of double taxation of dividends have resulted in very low payments. A recession could be expected to result in lower capital requirements and taxes.

3. Can the electric utility stocks be expected to show

Table 6. Price X Earnings

Growth	1937 H to H 36 or 37 Earns.	1946 H to 1946 Earns.	6/30/55 Mkt. to Est. 1955 Earns.
Dow	39.7	20.6	32.1
Du Pont	24.6	24.0	27.8
Hercules	29.2	22.2	19.2
Monsanto	24.4	24.9	24.0
Union Carbide	23.1	20.4	24.9
Average	28.2	22.4	25.6
Abbott	21.9	15.8	16.7
Merck	14.2	14.8	16.1
IBM—Worldwide	17.8	18.8	25.2
Nat'l Cash—Worldwide	16.2	14.9	16.1
Aluminum Ltd.	11.9	12.9	26.3
Crown Zellerbach	16.0	7.6	17.9
Scott	20.9	30.4	26.4
Continental Oil	16.4	12.3	19.9
Phillips	11.8	15.9	13.9
Shell	22.1	18.3	14.2
Standard Oil of Ind.	13.6	11.3	12.3
Standard Oil of N. J.	13.5	13.7	13.4
Average	15.5	14.3	14.7
Income			
Cleveland Electric	21.7	15.9	16.0
Commonwealth Edison	16.7	18.9	16.0
Consolidated Edison	21.3	16.2	16.3
Baltimore Gas & Electric	20.0	17.2	18.3
Detroit Edison	18.2	16.8	16.6
Pacific Gas & Electric	15.6	18.1	15.8
Average	18.9	17.2	16.5
A. T. & T.	19.2	19.8	15.0
General Foods	16.3	14.8	13.8
National Dairy	14.0	9.3	14.0
National Biscuit	22.4	15.5	14.6
Kroger	14.6	11.1	11.2
Average	16.8	12.7	13.4
American Tobacco	21.2	16.8	10.5
Woolworth	20.8	15.2	14.8

Table 7. Yield

Growth	1937 H to 1937 Div.	1946 H to 1946 Div.	6/30/55 Mkt. to Current Div. Rate
Dow	1.8	1.5	1.7
Du Pont	3.4	3.1	2.6
Hercules	3.4	2.1	2.7
Monsanto	2.8	1.7	2.1
Union Carbide	2.9	2.4	2.5
Average	2.9	2.2	2.3
Abbott	3.8	3.2	4.2
Merck	3.3	2.7	2.8
IBM—Worldwide	3.3	2.4	1.0
Nat'l Cash—Worldwide	3.2	2.7	2.7
Aluminum Ltd.	0	4.4	1.9
Crown Zellerbach	3.0	3.7	3.4
Scott	3.4	2.9	2.4
Continental Oil	3.1	3.4	3.1
Phillips	4.3	2.7	4.0
Shell	2.9	3.3	3.2
Standard Oil of Ind.	4.6	3.5	4.1
Standard Oil of N. J.	3.3	3.7	3.9
Average	3.6	3.3	3.7
Income			
Cleveland Electric	4.0	4.0	4.4
Commonwealth Edison	4.5	3.9	4.2
Consolidated Edison	4.0	4.4	4.9
Baltimore Gas & Electric	3.9	4.0	4.8
Detroit Edison	3.9	4.3	4.3
Pacific Gas & Electric	4.7	4.1	4.5
Average	4.2	4.1	4.5
A. T. & T.	4.7	4.5	4.9
General Foods	4.5	3.6	3.6
National Dairy	4.2	3.6	4.1
National Biscuit	4.1	3.2	4.8
Kroger	5.7	3.8	4.8
Average	4.6	3.6	4.3
American Tobacco	4.7	3.2	6.4
Woolworth	3.4	3.4	5.1

greater relative price stability than they did in the late thirties following the passage of the Public Utility Holding Company Act in 1935, or than ten years later when the actual break-up of the holding companies caused large offerings of utility equities?

The electric utility stocks used in the tables were those of operating companies and, therefore, not directly affected by break-up orders, although the whole industry was distinctly out of favor. On the other hand, considering the performance of American Telephone which was entirely unaffected by the legislation and which was and still is regarded as the country's premier income stock, we find no reason to believe that the utility group's relative performance will be better in future declines.

4. Will purchases by pension funds and other institutions, which have been such an important source of market strength, be concentrated on the income issues?

They have not done so to date and it is understood to be the objective of many institutions to effect a dollar-averaging program including growth and income stocks.

5. What, then, are the prospects of success of those who would buy income stocks now with the intention of switching them later into growth stocks at lower levels?

It is believed that there are several major reasons why plans of this type will not be generally successful. First, it appears doubtful that percentage declines in growth stocks of high quality will be greater than in income stocks. Second, relative dividend performance will probably be better than in the past. Third, there are too many people intending to do this to allow its successful accomplishment on a broad scale. Finally, anyone who has dealt with investment committees or individual investors knows how difficult it is to get approval of the sale of a high quality stock on a 5½% or 6% basis that was bought to yield 4½% or less on the purchase price.

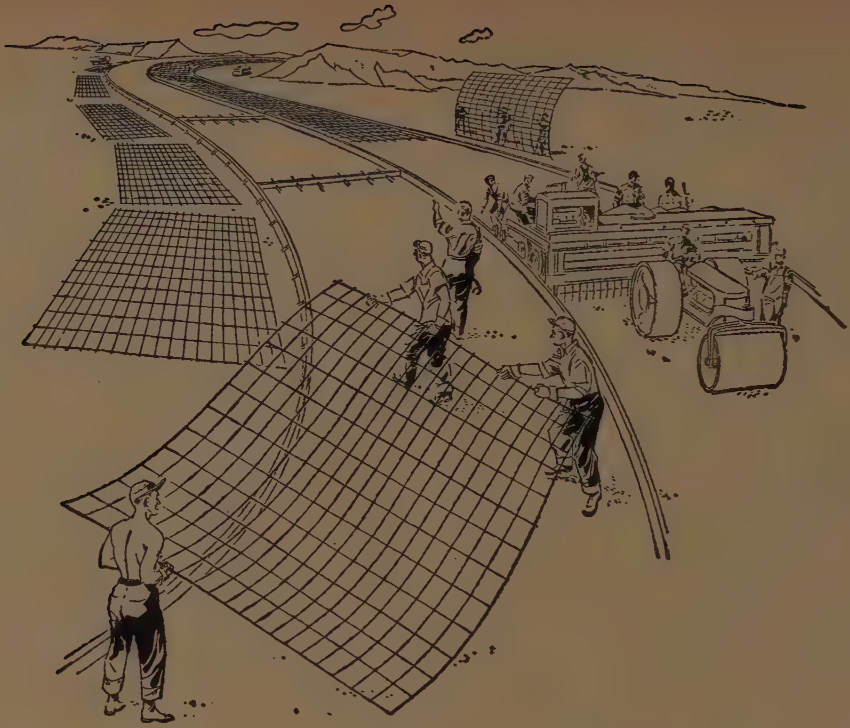
The reduction in capital which the tax bite would inflict would indicate that a switch from growth to income stocks at this time and back again later could be expected to work out even less successfully.

CONCLUSION

Of course, we may not have a major decline for some time and no thoughts here expressed should be construed to indicate that that is my expectation. I know we shall some day. I don't know when and I don't know the person who does. When it does occur, it does not appear that the holder of high-quality growth stocks will suffer more than the holder of income stocks and, in the meantime, he should do better.

Table 8. % Payout

Growth	1936	1937	1946	1954	1955 Est.
Dow	71.4	76.9	30.3	62.5E	55.6
Du Pont	80.9	85.7	74.2	74.9	72.7
Hercules	82.9	100.7	46.0	58.8	52.8
Monsanto	74.6	68.0	45.6	56.9	50.0
Union Carbide	63.0	66.9	49.0	80.6	61.0
Abbott	88.0	84.2	50.0	81.4	71.2
Merck	20.0	50.0	40.2	73.4	57.1
IBM—Worldwide	59.2	57.9	45.9	33.5	30.8
Nat'l Cash—Worldwide	63.6	51.7	40.3	48.5	44.0
Aluminum Ltd.	0	0	57.1	51.6	50.0
Crown Zellerbach	0	48.1	28.2	49.4	60.9
Scott	62.8	70.9	88.2	67.6	64.4
Continental Oil	61.3	50.3	41.9	60.7	62.2
Phillips	62.4	50.9	43.6	50.0	55.6
Shell	16.9	69.0	61.2	42.5	44.9
Standard Oil of Indiana	77.4	62.5	39.6	56.2	50.6
Standard Oil of N. J.	53.9	44.3	50.5	50.9	52.1
Income					
Cleveland Electric	90.6	87.6	62.9	67.4	69.6
Commonwealth Edison	73.5	75.0	73.3	66.7	67.9
✓Consolidated Edison	74.8	92.2	72.1	78.2	80.0
Baltimore Gas & Electric	80.0	77.9	67.8	74.1	88.9
Detroit Edison	71.2	76.8	71.7	78.0	71.1
Pacific Gas & Electric	63.5	73.4	73.4	76.4	71.0
A. T. & T.	91.0	92.2	88.9	78.8	73.8
General Foods	83.0	114.3	52.8	62.6	50.0
National Dairy	59.4	77.9	34.0	56.0	56.7
National Biscuit	92.5	98.8	49.0	70.2	70.2
Kroger	99.0	98.8	42.2	49.5	53.3
American Tobacco	134.8	99.2	54.5	71.9	67.7
Woolworth	71.4	70.2	51.1	89.9	75.8



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Despite the billions of dollars being called for, the backlog of highway construction for the next few years is only a superficial measurement of the steel these super roads will require.

True, the backbone of the highway itself is steel.

The welded wire fabric, steel reinforcing bars, culverts, steel curb bars—all these Republic makes in large quantity. As one of the nation's largest steel companies, Republic might be expected to make such basic products, as well as the special alloy steels needed for construction machinery.

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Republic Steel

General Offices: Cleveland 1, Ohio

Where diversification makes the backlog last longer

The Saar Steps Into Large Production

SANFORD GRIFFITH

THE SAAR, A SMALL BUT IMPORTANT heavy industrial area in the heart of Western Europe, already has a taste of prosperity and, with gradual removal of a hundred obstacles, is feeling the tingle of industrial activity. As war destruction is repaired and political pressures are withdrawn, one area after another in Europe is getting into production. And now the Sarr. With the political fate of the area undetermined over the last decade, foreign capital, for understandable reasons, held off. The French provided a moderate amount of capital but far from sufficient. Today a quarter of a billion dollars could profitably be employed in modernization of plants.

FRANCO-GERMAN COLLABORATION

The Saar is now about to get a European status: to remain still in the French monetary and customs union but to have almost full autonomy in home government, under the supervision of the West European Union. Among the seven states in the Union are Britain and, more important for peace in the Saar, both France and Germany. This treaty provides for Franco-German collaboration, and thus aims to remove the century-old tug-of-war over the Saar. For the first time a statute has been drafted that gives full recognition to the obvious geographic and economic fact that security and prosperity for the Saar must rest on close and amicable relations with both powerful neighbors. The Saar will have a commissioner, a sort of overseeing trustee in the person of a member of the W.E.U., and the headquarters will presumably be in Saarbrucken, the capital of the Saar. Also hereafter the Saar will have representation in all councils where its interests are being determined. There will be a referendum on the new W.E.U. status this fall, and indications are that most Saar people favor it. After will follow new elections. The statute will probably be in operation by the end of the year.

The little Saar until now has been a major object in European politics and the object of much more attention than the Saar people themselves welcome. That so minute an area plays so large a part in international affairs is a source of wonder even to the Saar people themselves because the Saar has less than a million inhabitants and covers less than a thousand square miles. Thus the Saar is smaller even than Rhode Island. It is as though Rhode Island were set up with almost all of the trappings and with the officials and offices of a sovereign state and found itself constantly involved in conflicts among the Great Powers without being one of them. For the last couple of years the Saar was even the major obstacle to the French agreeing to go along with the Germans in the common defense of Western Europe.

Over a thousand years the Saar has been an apple of discord in wars of conquest, and in the last century in economic power politics. The reason is that under this vital border area also lie rich coal fields and near by is iron ore. Discovery of the blast furnace about a century ago made possible the rapid growth of heavy industry there. The Saar even before the time of Napoleon had a settled mining population. Since then labor has moved in from adjoining areas, mostly from Germany, and become an integrated part of the Saar population. The Saar workers are the hardest working and the most stable working population in Europe today.

Although easy of access in the heart of Western Europe, surprisingly little is known about the Saar by the outside world. Picturing the area as one of grimy mines and smoking furnaces, few tourists have been going there. French military, later replaced by French civil administrators, moved into the area, but few French tourists. Probably they imagined the Saar as too German, just as German tourists stayed away because they imagined that the Saar had become too French. Tourists ignored the gentle rolling hills, the tidy woodland, and spotless picturesque villages which make the Saar comparable to Alsace as a desirable area to visit.

SAAR PEOPLE GERMANIC

Many Germans have a simple old style power politics attitude about the Saar: the people are Germans, the Saar belongs to the Reich, and that is that. This attitude no longer fits the times. It ignores common French and Saar interests. Adenauer, in opposition to many of his own party, understands how unfortunate it would be for the little Saar to upset a much larger France-German and European community of interests. Also it ignores how the Saarlanders feel about it themselves. The Saar people are a Germanic people, German in language and culture, and decidedly German in ways of living. But there it ends. The number of Saarlanders who cling to Germany—a my country right or wrong attitude—is not large. The Saar people, like many other old mining communities, are firmly attached to their local life. The workers are attached to their homes, to their churches, yes and to their local beer halls. Saar miners, offered more money to work elsewhere, prefer to stay with their buddies in the local mines. Saar people are proud of their local institutions and defend them against all comers.

What many Germans also overlook is that the Saar people, while German, also have had too many bitter experiences being linked to the Reich, particularly with Hitler's Reich, to feel an irresistible urge to return. However, this does not mean that they want to be French. They do not. Although French families have been living among them for years, the Saar people cling to their language and local customs and do not want a change. They are even slow about learning French, only about one in ten really speaking it. To the credit of the French during this occupation, they have not tried to change the language nor to upset local customs. Indeed, the French have shown praiseworthy tolerance. After the collapse of Hitler's Reich, France could purely and simply have annexed the Saar, with no serious objections coming from any side, not even from the Saar people themselves. The French showed restraint, broke away from their own old power pattern, and chose to make friends instead. Contrary to reports, the French have on the whole maintained a tolerant regime in the Saar. It has been, for example, less military and less oppressive than any of the Allied occupations in Germany. There is free play, and rightly so, for French and German competition in the cultural field, notably in an excellent bi-lingual university and a municipal theater offering the best of both French and German plays. Thus the Saar has become the first pilot project of Franco-German peaceful working collaboration.

SWEPT BY THREE MAJOR WARS

The wonder is that over the troubled times of the past century, particularly since World War II, and with the uncertainties existing down to yesterday, the Saar people have had the optimism and drive to go ahead and rebuild and to expand their industries. For tribulations the Saar competes with Job. A Saar citizen has had five different issuing authorities of passports over the last 30 years. In one man's lifetime the country has been swept by three major wars, and in two of them served as a battlefield. In this last war the Saar was an integral part of the dragon's tooth West Wall. What was not smashed by big guns was blasted by bombs from the air. To give an idea of what this means: The people found more than half of their homes in ruins and 60% of their factories smashed. More than one Saarlander in ten fell in the war. Returning home families literally had to push aside the ruins with their hands. Women and children joined their menfolk who survived in clearing away debris, and stacking old brick. A constructive achievement is that rival political parties and local groups buried their differences and worked together on restoring their homes and villages. So today they can point with pride to a rebuilt country; tidy villages, new schools, churches and factories.

With the political fate of the Saar undetermined, modernization of industry lagged. Money has been scarce, and still is at too high rates. People needed goods to rebuild their homes from the foundation up and to refurnish them. Two world wars left them back near the XIX century as far as household and labor-saving appliances went. Radios are not numerous and TV has only just begun to come in. Incidentally, the Saar people have not yet lost the talent of entertaining themselves with home-made music and local sports of all kinds.

A few of the large plants, internationally owned, notably in sheet iron, steel plates, iron pipe and pottery, went ahead with their rebuilding and modernization. But the two basic industries coal and steel have lagged behind.

Today over a quarter of a billion dollars could well be spent at the rate of some $50 million a year on Saar industry. Another $50,000,000 a year for several years could well go into consumer goods. Part, perhaps most, of this additional spending would be in Germany. The Saar had mainly German machinery and needs spare parts. The people were long accustomed to German styles and appliances. However, some of the new industries that have sprung up in the Saar should doubtless continue to be protected because they assure a more diversified production and make employment in the Saar less dependent on powerful neighboring industries. The French also can reasonably expect continued protection for some of their products in the Saar as a counter compensation for financial and other concessions they make the Saar inside the customs union. The Saar should normally continue to look to France for food and many kinds of manufactured goods. To France the little Saar is of major importance, coming second as an outlet for French exports, and third for imports. Wise and reasonable compromises will be needed to resolve all these conflicting interests. The recent Franco-Saar trade agreement goes a long way in this direction.

The Saar coal mines is the major industry in the Saar which has been in dispute and is now happily settled. The mines were formerly owned and operated by the Prussian State. Top posts in the mines, as well as in the Saar generally, went to outside German functionaries and engineers. With the collapse of Germany, the French took over the mines in lieu of reparations. Here the French have shown tolerance and understanding and have made a deal decidedly favorable to the Saar. For 50 years half the profits go to the French and half to the Saar, with the operation and title to the mines going to the Saar. The French have already done some modernization, notably installing American mining equipment, and are going ahead on further improvements. As an example of successful Franco-German collaboration on the working level the Saar mines are outstanding. Here French and German engineers, despite differences in language and methods, have stepped up coal production. German engineers have closer and longer experience with manual labor, while the French have more technical and theoretical knowledge. They have pooled these talents and operate efficiently together.

ROECKLING STEEL MILLS

A conspicuous laggard in modernization is the Roeckling Steel Mills, at Voelkingen, a mill which produces a quarter of the total steel of the Saar. Some 50 million dollars are needed here. This plant was the property of the Roecklings, a big steel family hostile to France over the last 40 years. Ownership of the property was to go to some 70 members of the family. The French felt entitled to this plant as some reparation for damage by the Germans in France. A compromise deal has now been concluded where the Roeckling family gets cash and gets out while ownership of the property goes half into private French and half into private German hands. Many Saar people feel that the Saar should also get title to a slice of the Roeckling property. As aggressive traders, they may still get it. However, there is a feeling against nationalization of industry in the Saar. The recent Franco-German deal opens the way for sale of Roeckling securities on foreign markets and thus access to capital for long overdue modernization.

Smallness also means customs frontiers almost within a stone's throw in all directions. Germany after the collapse at first could not, and later was restricted by customs barriers from exporting goods into the French customs area including the Saar. Meanwhile numerous small industries started up in the Saar. Of necessity their costs are higher than those of plants supplying a large market. Paris was reluctant for some years in granting import licenses. All this took time and annoyed the Saar people. The Saar people have had to restock their homes from top to bottom. Household furnishings still cost some 15 to 20% more in the Saar than in Germany. The same applies to some articles of wearing apparel, notably shoes, which owing to mass production were cheaper in Germany.

Like all border peoples, the Saarlanders are very price conscious. They scan the papers from the adjoining countries, and hop a train or a bus when they think that they see a real bargain. Though a most law-abiding people, many Saarlanders like to indulge in the petty larceny of slipping in goods without paying the duty. With their pronounced craving for German styles, these French obstructions have probably been the single greatest cause of annoyance. The new Franco-Saar economic agreement should remove much of this irritation and criticism by providing for a drastic cutting down in licensing and a progressive opening of the German market to the Saar. If the parties to this transition follow through in a reasonable way, probably in the end the French will also benefit by this liberal policy in the Saar. The benefits to the Germans are obvious.

Uncertainties about the future status have more than anything held back progress in the Saar. Among the questions the Saar citizen asks himself: If I am friendly and collaborate with the French today, and if tomorrow the Saar goes back to Germany, will I be punished for collaboration? Then he had reason to worry about the currency. He has been loaded with two administrations, his own and that of the French. These cost money—though a third less than the Germans have been paying for their administration plus occupation. Also he has found business difficult because he has had to refer to a distant capital for decisions. In the old days it was Berlin, and in this last period Paris. Under the new European set-up, most decisions will be made locally and—very important—he will have a Saar representative participating.

All these are considerations why proposed Europeanization of the Saar seems a desirable solution. Many of the Saar people have somewhat hazy notions about just how Europeanization would function but say, "If it means more of the kind of prosperity we were getting, we want it." They assume that it means opening the doors to travel and trade in all directions. They also hope that it will attract numerous international bodies to make their headquarters at Saarbrucken. The Saar is centrally located and Saarbrucken is a community where there is a high degree of political and social stability. As an American who has visited the Saar repeatedly over recent years, I cannot but be impressed both with the realism and zeal of the Saar people. They show now—as they did not back in 1935—the kind of tolerance toward peoples of other languages and of other customs that makes Switzerland so attractive for international business. The Saar people have no great political pretenses nor ambitions. But the kinds of freedom they want are of the sort that will make Europe a better place to live in.

GOULD-NATIONAL BATTERIES, INC.
SAINT PAUL, MINNESOTA
Manufacturers of Automotive and Industrial Batteries
DIVIDEND NOTICE

Preferred Dividend

The Board of Directors today declared a regular quarterly dividend of 56¼¢ per share on the Cumulative Preferred Stock, payable August 1, to shareholders of record July 20, 1955.

Common Dividend

The Board of Directors today declared a dividend of 42½¢ per share on Common Stock, payable August 1, to shareholders of record July 20, 1955.

A. H. DAGGETT
President

June 13, 1955

Common and Preferred Dividend Notice

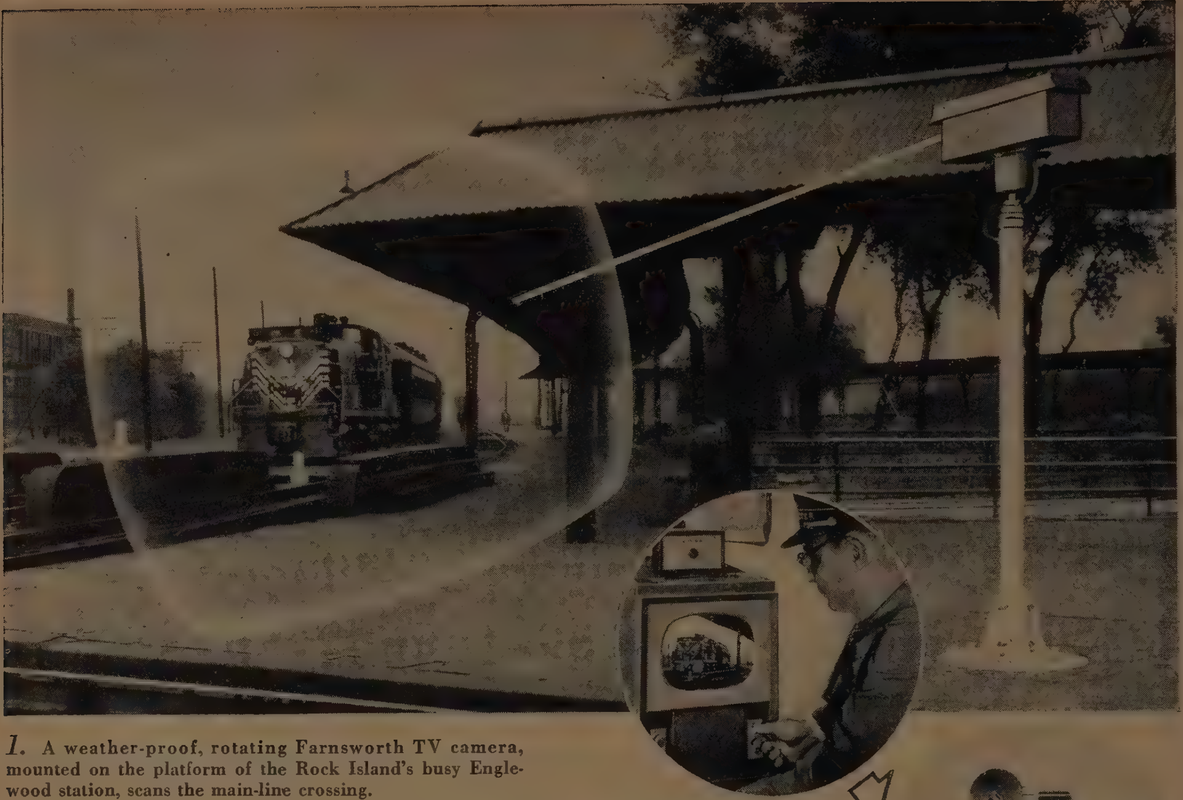
July 20, 1955

The Board of Directors of the Company has declared the following quarterly dividends, all payable on September 1, 1955, to stockholders of record at close of business August 1, 1955:

Security	*Amount per Share*
Preferred Stock, 5.50% First Preferred Series	$1.37½
Preferred Stock, 5.00% Series	$1.25
Preferred Stock, 4.75% Convertible Series	$1.18¾
Preferred Stock, 4.50% Convertible Series	$1.12½
Common Stock	$0.35

Secretary

TEXAS EASTERN *Transmission Corporation*
SHREVEPORT, LOUISIANA



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2. **The visual information is fed by cable to a TV monitor at the station.**

3. **Simultaneously, the picture is transmitted by Federal microwave from an antenna on the station roof.**

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5. **Thus, six miles away, Rock Island executives can see the actual loading and unloading of passengers, baggage, and mail, as well as other railroad operations.**

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Growth of the Airline Industry

SCHROEDER BOULTON

AIRLINE SECURITIES ARE a challenging subject for investors, institutional or individual, to whom long-term capital growth is an important factor. Airline companies have been growing faster than the majority of the better known growth companies—stocks of which have been commanding far higher price-earnings ratios. Over the past year, airline stocks have been recovering from an almost continuous 8-year period of pronounced unpopularity; even so, during the second quarter of 1955 they remained lower in price in comparison with cash earnings than any other important group possessing investment acceptance or speculative popularity.

Why did airline stocks lose their popularity nearly a decade ago? Why are they now regaining acceptance? In 1945-46, over-optimism affected airline companies, with few exceptions, resulting in a too rapid expansion without allowance for financial problems, or for the rise in costs which was to follow a decline to normal seat-occupancy ratios of 60%-70% from the 90% ratios of wartime. Over-optimism affected the Civil Aeronautics Board, stimulating excessive certification of new carriers, new routes and new competition on existing routes, and also giving rise to an ill-timed passenger rate reduction. Over-optimism was shared by investors and speculators, who purchased airline stocks at high prices which reflected a shortage of the stocks and an unrealistic appraisal of the industry's earning power.

INDUSTRY WAS NOT PREPARED

Most airlines shifted from profits to losses after 1945. However, the industry was not prepared, either financially or in operating methods, for the problems this change posed. New equipment produced in 1947-50 was integrated into flight patterns designed for aircraft built in 1936-40. Inadequate ground facilities compounded the industry's inefficiencies. Nevertheless, essential growth factors remained in force; when coupled with altered policies on the part of Washington and the industry, these growth factors later reasserted themselves with profitable effect.

In 1949 and 1950, most carriers established an impressive recovery from the deficits of the postwar period. This recovery was followed by further improvement in 1951-53. In the final half of 1953 and the first four months of 1954, traffic was affected, moderately, by the general business reaction. However, the concomitant decline of load factors principally reflected expansion of seat capacity. In the spring of 1954 the airlines broke away from a generally dull national business pattern and accomplished a better-than-seasonal traffic upturn. Recent growth in monthly passenger mileage has been dramatic, gains equaling 40% in 1955 for some carriers.

With revenues running some 500% of the 1945 level, most airline companies at last have been earning at the rates discounted prematurely in 1945. Although cash earning power has been rising for many years, only recently—after a long period of irregular fluctuations—have reported net earnings shown important improvement.

LOOKING AHEAD WITH AIRLINE COMPANIES

New sources of passenger traffic and continued expansion of established traffic sources are strongly pushing the growth of revenues. An increasing number of people find it desirable to fly, either on business or pleasure, so that the industry is developing a natural widening of market and an increasing market penetration, with traffic lured from competing carriers—notably, the railroads.

Technological improvement permits over 98% of scheduled flights to be made as compared with 92% in the 1930's. Technological improvement also contributes to safety; airline fatalities per million passenger miles actually were less than railroad fatalities in 1954.

MORE FREQUENT FLIGHTS

The growth of airline traffic is permitting the scheduling of more frequent flights, enabling the traveler to choose with greater ease a flight convenient to his needs.

The air transport industry is nowhere near saturation, either in freight, express or passenger operations. The industry estimates that fewer than 12% of the population have ever taken passage in a commercial airliner.

Possibilities of freight traffic have barely been scratched, as airline companies have been so busy following through a rapid growth of passenger traffic that inadequate attention has been paid to freight. Without special attention, except from a few carriers, freight business has, even so, over a period of years grown somewhat faster than passenger business. For a group of ten carriers, revenues from freight, express and excess baggage contributed 4.3% of gross in 1945 and 5.5% in 1954. (Gross revenues from all cources over this same period grew by 427%.) In time, as more attention is given to freight potentialities, a large growth of freight revenues may be expected. Newly-agreed transatlantic freight rate reductions, averaging 20%, to a level of 26c a pound and affecting 75% of freight traffic, are expected to boost total traffic by 50% after they go into effect this summer.

The aircraft manufacturing industry, involved as it has been in specialized efforts in the production of military planes and commercial passenger planes, has not been offering to airlines any mass-produced, efficient plane specifically designed for freight traffic. In time, when such craft are available, the benefits will be pronounced. In December, 1954, it was published that Douglas Aircraft had developed a plane capable of carrying freight at a direct cost of 4½c per ton-mile, compared with the lowest present cost of about 8c; no further announcement has been made, and it is believed that the entire output of the new freight plane, at least initially, would be for military purposes.

RATES FOR TRAVEL

Airline fares have not reflected the general inflation of the economy. First class fares are only 11% above the 1941 level, while coach fares are 18% below the first class fares of 1941. (Coach flights were not made in 1941.)

Budget plans and rate reductions for family travel on days of off-peak traffic are stimulating the growth of air travel. Through normal banking channels, credit on a 12-months' payment basis is now available to meet airline travel costs, both domestic and international.

The industry has been losing money on short flights while profiting on long distance flights. The CAB has refused, thus far, to make broad adjustments of the rate structure to recognize this fact. It is hoped that in time it will recognize the cost difference in long and short haul operations and permit the addition of a flat charge per ticket sold. So far as any threat may exist of the CAB reducing airline passenger fares in order to limit airline earnings, it does not appear that under present law this threat exists against those airlines which are carrying the mails at service rates rather than at a subsidy.

Should increased airline passenger rates become necessary, the industry would be in a very different position than it occupies with respect to possible rate cuts. The CAB is gradually changing in character, and the new chairman, Mr. Ross Rizley, is making a determined effort to improve the efficiency of the CAB as a regulatory body. Until now, however, except in decisions of local impact, the CAB has, over a long period, not been cooperative about rate increases. Instead, airlines have had to rely on the growth of traffic and technological improvements working toward heightened efficiency in all phases of operation.

EARNING POWER

Engineering and management efforts toward improved efficiency will continue to be fruitful in the future as in the past. This does not serve as a guarantee of uniformly good operating profits. While investors are justified in expecting a continuing long-term growth of net income for airline companies, they must also be prepared for interim periods, sometimes unexpected, of earnings squeeze, reflecting changes in fuel or wage costs, or the temporary impact of the declines in seat occupancy rates which accompany receipt of major quantities of new aircraft.

Mail revenues of trunk carriers, once the major element in total revenues, have reverted mostly to a service (non-subsidy) basis and constitute a small element, well below 5% of total revenues. Only three of thirteen trunk carriers now receive a so-called mail subsidy. Average mail compensation rates may continue to decline, but gross mail revenues promise to increase, as a result of a gradual shift of mail from railroads to airlines and motor carriers.

The Post Office Department is now experimenting with diversion of long distance Class I mail from railroads to airlines, to provide faster delivery to the public. This experiment involves a mail pay scale less than half the service basis paid at present to the trunk carriers. Nevertheless, should long distance Class I mail be so diverted, worthwhile revenue benefits to the airlines—probably on the order of $40 million annually— could result.

Internationally, a large increase in revenues, and a substantial shift of revenues from subsidy to direct compensation, is taking place in 1955, following allocation to private carriers at the end of 1954 of some $18 million of Army airmail traffic.

The regulated position of the airline industry with regard to passenger rates, freight rates and mail rates is very different from that of the railroads or the motor carriers. Airline revenues are vastly higher in relation to invested capital than are the revenues of the railroad industry. Trucking companies also obtain unusually large revenues in relation to capital; thus, they operate successfully on very narrow margins, whereas railroads require very wide margins. A safe margin for an airline company lies between the margins of the railroad and motor carrier industries. Maintenance of correct operating margins by airlines or motor carriers necessarily results in a materially higher rate of return on invested capital than usually obtained by railroad companies.

NEW TYPES AND NEW MODELS

The problem of converting to new types of planes was an overwhelming one in 1946-50, when the industry was poorly prepared in finances, personnel and operating methods for the adjustment. Memories of the difficulties of this period have a continuing influence on the thinking of investors, even today, when the position of the industry is entirely different and when airlines can take advantage of new technological developments rather than be hurt by them. In passenger equipment, the industry has largely standardized, for long distance passenger flights, on the DC-6B, DC-7 and the somewhat slower but still efficient Constellation and Super Constellation; for shorter flights, on the two-motor Convair liner.

Changes to new models, when they take place, may well be evolutionary rather than revolutionary, with a shift to turbo-prop models for flights of medium length and to turbo-jets for long distance flights. Present equipment may, therefore, work out a long economic life. The move toward quiet, fast turbo-props on flights of medium length is already beginning, with the introduction of the Vickers' Viscount on routes of Capital Airlines. This will be followed, in late 1958, by American Airlines' use of a new Lockheed turbo-jet.

COMMERCIAL ORDERS ACCUMULATING

The most rapid rate of commercial orders in the company's history has been accumulating for the Douglas Aircraft piston-powered DC-6's and DC-7's. However, Douglas Aircraft has announced that it will set up a production line for the DC-8, a luxury, 550-mile per hour jet airplane especially adaptable to transcontinental and intercontinental flights. Deliveries to airlines are expected to begin some time in 1959. This new craft is expected to offer economic advantages in stimulating traffic by offering new elements of comfort and speed. On flights longer than 700 miles, it is claimed, somewhat surprisingly, that the operating costs per seat-mile of the DC-8 will be 20% below those of the present-day DC-7.

Of great importance, depreciation write-offs are as much as 20 times larger than they were in the earlier period of equipment change, so that whatever is thought advantageous in new models may, in large part, be financed through internal resources. Thus, the industry may continue its accomplishment of great revenue expansion with little equity stock dilution. Because of large cash flow and a high rate of capital turnover, the industry has been maintaining, since World War II, an unusual financial performance in the expansion and modernization of fleet capacity, with minimum resort to new equity financing. The major postwar outside financing of the airline industry has been through debenture debt and serial bank loans. The second ranking outside source of funds has been preferred stocks, which mainly have been convertible into the common at a price above the level of the common at time of issuance. Finally, there has been small scale resort to new common stock financing.

The airline industry generally follows a policy of writing off equipment to residual values in from 5 to 7 years, largely accounting for the impressive flow of cash earnings. A modern airplane can last as long as 12 to 15 years; many DC-3's are older than that. The shorter write-off period appropriately allows for economic obsolescence. However, accounting write-offs of some leading companies are now beginning to decline because of the number of planes still in use which have been written down to residual values. The drop in write-offs will be somewhat less than earlier expected, as continuation of a strong trend of traffic may require the purchase of new planes on a stepped-up basis.

Capital profits in selling surplus equipment are a large factor in the reported earnings and growth of book values of some airlines. While such income should be valued at only a one-to-one ratio in common stock appraisal, the profits constitute an additional indication of the conservatism of depreciation accounting of the industry. Market values of flight equipment are far above the values reflected on the books, so that airline book values, as reported, are, in a practical sense, understated.

Airline companies have been applying to the CAB for major alterations of route structure, or permission for

American Airlines

	1945	1954
Earnings:		
Gross Revenues ($000,000 omitted)	$47.4	$214.8
Per Common Share	$ 7.35	$ 25.07 *
Mail — % Revenues	12.6%	3.1%
Freight, Express & Excess Baggage — % Rev.	7.1%	7.2%
Operating Income before Deprec. — % Rev.	21.3%	19.5%
Load Factor	89.9%	67.8%
Depreciation — % Revenues	4.1%	9.8%
— Per Common Share	$ 0.30	$ 2.47 *
Operating Income after Deprec. — % Rev.	17.2%	9.7%
Net per Common Share	$ 0.67	$ 1.33 *
Cash Earnings per Common Share	$ 0.97	$ 3.80 *
Capitalization and Market Valuation:		
Capitalization — Funded Debt ($000,000 omitted)	—	$ 30.0
— Preferred Stock " "	—	40.0
— No. of Common Shares	6,452,840	6,636,245
Book Value per Share	$ 4.05	$ 12.17 *
High-Low Market Price, Common Stock	18 7/8 – 8 1/2	22 5/8 – 11 1/2
Median Price, Common Stock	13 5/8	17
Median Price X Reported Net	20.3x	12.8x*
Median Price X Reported Net before Deprec.	14.0x	4.5x*
Price Common Stock (early June, 1955)	28 1/2	
1955 Range Common Stock	29 1/8 – 20 1/2	
Recent Price X 1954 Net	21.4x*	
Recent Price X Reported 1954 Cash Net	7.5x*	
Dividend 1954	$ 0.60	
Current Indicated Dividend Rate	0.80	
Latest Projected 1955 Net from Operations	2.50*	
Possible Reported Net by 1958	4.00*	

*Because it has become profitable to convert American Airlines preferred to the common, the per share earnings figures in the above table for 1954 and the per share projections of later years have been adjusted downward, allowing for the full effect of issuance of more common stock through preferred conversion. Book value per share also has been adjusted.

(Earnings of American Airlines in 1954 reflected non-recurring strike costs, a moderate gain on sale of equipment and change in depreciation policy. There was also a non-recurring tax credit, excluded from the calculations in our table. For a fuller understanding of the table, and for added interpretative background, the analyst should refer to the annual report itself.)

mergers. The present period of rapid expansion of airline traffic provides an opportunity, of which it has begun to take advantage, for the CAB to authorize new routes, or new privileges to take on or discharge passengers along existing routes, without in the process unduly hurting the revenues of established interests.

Monthly increases in passenger traffic of individual lines have been ranging, in 1955, from 10% to as high as about 42%. Accordingly, airline companeis are now showing a strong earnings trend. Airline traffic began to pick up satisfactorily last year during the second quarter, particularly after the reduction, in April, of the Federal transportation tax from 15% to 10%, so that favorable traffic comparisons may moderate as the year proceeds. For some carriers, equipment shortages in the peak season will be a factor. However, for 1955 as a whole a much larger rise in passenger traffic is expected than the 14% scored by the industry in 1954.

SUITABLE AIRLINE STOCKS

Selected airline stocks should be considered suitable for those institutional or individual investors who are at least as interested in long-term capital betterment as in immediate income. They are almost ideally adapted for pension fund investment, as they promise to provide rich yields in later years when necessary pension fund disbursements will be on the upgrade. Over the past year, airline stocks have been bought by some individuals and by a large number of investment trusts but they have not yet obtained widespread acceptance among pension funds. As an understanding of the operating and financial factors of this industry spreads, airline securities may, more and more, receive the serious consideration which they merit of such professional investors.

The analyst would do well to set up his own criteria for following consistently the results of individual airline companies and for making choices among airline securities. Useful in this connection will be the record of earnings, also such projections as may reasonably be made of earning power, both for 1955 and for a period up to five years ahead. In making projections, assumptions must in part be somewhat arbitrary, with respect both to cost trends and trends of revenues.

As a sample of the type of comparison which may be helpful, a brief presentation is given on preceding page of a comparative net earnings and stock market valuation figures applicable to the largest domestic carrier, American Airlines, for two key years, 1945 and 1954, together with additional data in relation to the more recent market price of American Airlines stock.

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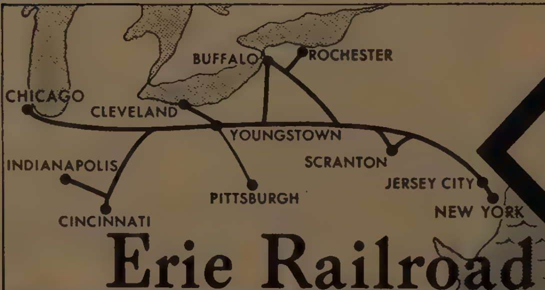

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The Growth Factor in Railroad Stock Analysis

O. K. BURRELL

SUPPOSE THAT $1,000 HAD BEEN INVESTED in each of six railroad common stocks on February 1, 1947. If these stocks had been held for seven years with all dividends retained (but not reinvested) and if the stocks had been sold on February 1, 1954, the amounts realized would have been as follows:

	Total Realized	Gain	Equivalent Compound Rate
Denver & R.G.W.	$7,937	$6,937	34.44%
Seaboard Air Line	6,708	5,708	31.25
N. Y., C., & St. L.	5,813	4,813	26.45
Chesapeake & Ohio	1,041	41	0.57
Pennsylvania	948	* 52	−0.87
Chicago & Northwestern	642	* 358	−6.13

*loss

This disparity in performance is so great as to suggest widely varying industries rather than different units in what has been considered to be a quite homogeneous industry. The performance of Denver & Rio Grande Western and Seaboard Air Line is comparable to the performance of the most rapidly growing companies in chemicals or electronics; the performance of other rail stocks such as Pennsylvania and Chicago Northwestern is more comparable to the performance of stocks in declining or "problem" industries. But we have not thought of railroads as "growth" companies; indeed there is some disposition to view the railroad industry as at least "mature" if not "declining" on account of traffic losses to competing forms of transportation and to industrial decentralization.

WIDELY DIVERGENT PERFORMANCE

What is the explanation for the widely divergent performance of railroad stocks in recent years? Do some railroads have growth characteristics that account for expansion in common stock prices? Do other railroads have the characteristics of a declining industry that explain the relatively unsatisfactory performance of their common tocks? How close is the relationship between common tock results and increase or decrease in the physical and dollar volume of business of railroads? It would be astounding if there were not a positive relationship, but t might be understandable if the relationship were coniderably less than perfect.

PURPOSE OF INQUIRY

The purpose of this inquiry is to measure the financial performance of railroad common stocks in the period from February 1, 1947, to February 1, 1954, and February 1, 1955, and to study the relationship of common stock gains or losses to changes in the physical volume of traffic as well s other variables. Generally the study seeks to determine he characteristics of railroads whose common stocks have performed exceptionally well. The materials and methods are fully described below.

ORGANIZATION OF DATA

The common stocks of all Class 1 railroads listed on the New York Stock Exchange were included in the study with the following exceptions:

1. Leased line railroads where the common stock is essentially a bond type security.
2. Railroads with large accruals on preferred stock, such as Western Maryland, and Missouri, Kansas & Texas, where a major factor in valuation of the common stock is the prospect for settlement of such arrearage.
3. Railroads in receivership on February 1, 1947.
4. Railroads whose stock is usually quite inactive.

After elimination, forty railroads remained for inclusion in the study.

The essential criterion against which other variables were related was *Total Gain on Common Stock.* This was simply the aggregate dividends per share on the present stock (after allowance for splits) plus the increase in price or minus the decrease in price of the stock (after allowance for splits) between February 1, 1947, and February 1, 1954. This aggregate gain for each stock was converted to a percentage by dividing by the adjusted price on February 1, 1947. This then reflected the percentage gain or loss that would have been realized by one who bought the stock on February 1, 1947, and held it for seven years, retaining all dividends, and liquidating on February 1, 1954. Common stock gains in the period February 1, 1954, to February 1, 1955, were also computed, and these were studied in relation to traffic gains in the 1947–53 period.[1]

The forty railroads in the study were first arranged in order of total gain on common stock (February 1, 1947, to February 1, 1954). This tabulation was set up by quartiles, with ten roads in each quartile. Data were then computed for each quartile for each of the variables studied. The results, which are shown in Table 1, served to point up certain factors for further analysis.

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[1] Note on Adequacy of the Sample:

In time series analysis the adequacy of the sample is not related to its size, since no segment of time is a representative sample of all time. The validity of the conclusions of this study is dependent upon the assumption or demonstration that the test period is reasonably representative of the immediate or forseeable future. This is to say that the conclusions would seem to be valid if it could be fairly assumed that the same forces and causal factors at work in the test period would continue to be effective in the forseeable future. This requires subjective analysis rather than mathematics. The basis of selection of the test period was the conviction that the dynamic and causal factors at work in this postwar period could reasonably be expected to continue to be effective into the immediate future. Some of these forces are the relative industrial growth of the south and west, the rapid expansion of the natural gas industry and the relative decline in coal mining, and the continued loss of railway freight traffic to competing forms of transportation and to industrial decentralization.

It is hardly surprising that there is a positive correlation between traffic growth and common stock gains. It may be surprising that the relationship is not closer than that indicated in Table 1. As an example, the ten stocks in the fourth quartile on common stock gains had a better traffic record during this period than the ten stocks in the third quartile. Quite clearly there are wide deviations in the cases of several individual roads.

POSSIBLE AND PLAUSIBLE REASONS

There are many possible and plausible reasons for divergence between changes in the volume of traffic and common stock gains in this period. The following are suggested:

(a) Such divergence may represent simply undervaluation or overvaluation of stocks existing either at the beginning or ending date. Without doubt, stock prices in the long run reflect the fundamental valuation factors, including growth, but it is quite possible that there are temporary and irrational departures from such reasonable valuations.

(b) Disparity between common stock performance and change in the physical volume of business can be accounted for, in part at least, by variances in the carry through of gross revenue to common stock earnings. Valuation of railroad stocks may be based largely on *reported* earnings. If a railroad has an exceptional gain in ton miles of freight traffic, it may be that this will not be translated into common stock gains if overmaintenance prevents expansion in reported earnings. If a road has a poor growth record, its stock may still perform relatively well if reported earnings are held up or improved through undermaintenance of the property.

(c) Earnings paid out in dividends have an impact on market price several times the impact of earnings retained. Disparities between growth record and common stock results may be, partly at least, a result of changes in payout ratios. The data in Table 1 indicate that this was an important influence in determining common stock gains. Indeed, it may have been as important as actual changes in the volume of traffic and earnings.

(d) Disparities between traffic growth and common stock gains may be due in part to changes in the structure of rates. This was a period of inflation, and rates moved upward but there was some selectivity in the increases. Analysis of data in Table 1, indicates, however, that this was not a substantial influence in this period.

(e) Disparities between traffic growth and common stock gains may be due to a wide variety of relatively unique factors. In some cases, for example, it may be that traffic gains appear to be large only because of abnormal 1953 freight movement. The common stock performance of Northern Pacific was largely influenced by oil developments; the excellent common stock performance of the Rock Island was perhaps stimulated as much by fixed charge reduction through refunding as by growth in traffic; the weather and crop conditions sometimes lead to important but temporary traffic changes for the so-called "granger roads."

THE LEVERAGE FACTOR

It seemed desirable to combine the measure of change in the physical volume of traffic with the leverage factor in the capital structure in a way that would reflect the impact upon earnings of changes in traffic volume. This combined measure or "traffic leverage" factor was obtained by dividing the percentage change in total ton miles between 1947 and 1953 by one minus the per cent of debt and preferred stock to total assets. This "traffic leverage factor" was positive or negative depending on whether the traffic change was positive or negative.

Actually the traffic leverage factor proved to have very little independent significance. Perhaps this was because there were really few outstanding differences in capital structures. The co-efficient of rank order correlation between the simple percentage change in gross ton miles of traffic and common stock gains in the period was actually slightly higher than the co-efficient of rank order correlation between the "traffic leverage" factor and common stock gains. For this reason the leverage concept was dropped and subsequent analysis utilized only the simple percentage changes in freight ton miles.

Table 1

Showing Certain Data for Forty Railroads, Arranged in Quartiles According to Total Gain on Common Stock from February 1, 1947 to February 1, 1954.

	QUARTILES			
	1	2	3	4
Per Cent Gain on Common Stock	304.3	148.2	66.9	9.2
Per Cent Change in Gross Ton Miles per Freight Train Hour—1947-53	+34.4	+42.0	+21.7	+26.4
Per Cent Debt and Preferred to Total Assets	39.8	29.8	40.0	40.9
Per Cent Change in Total Ton Miles Freight 1947-1953	— 3.7	— 2.3	—19.2	—12.8
Per Cent Change in Dollar Freight Revenue	+34.3	+33.4	+30.3	+18.2
Price-earnings ratio February 1, 1947 based on 1946 earnings*	5.1	9.3	11.0	9.5
Price-earnings ratio, February 1, 1954 based on 1953 earnings*	4.8	5.7	5.4	5.4
Dividend yield Feb. 1, 1947*	4.1	5.4	6.4	5.3
Dividend yield Feb. 1, 1954*	6.5	5.7	6.7	7.9
Non-Dividend Stocks February 1, 1947	8	3	4	4
Non-Dividend Stocks February 1, 1954	0	2	1	3

* Price-earnings ratios computed by dividing aggregate price of roads showing earnings by aggregate earnings. Dividend yields computed by dividing aggregate annual dividend rate by aggregate price of stocks paying a dividend.

GROWTH IN RAILROAD TRAFFIC 1947 TO 1953 AND COMMON STOCK GAINS FROM FEBRUARY 1, 1947, TO FEBRUARY 1, 1954

It is now in order to examine the relationship between changes in freight traffic and common stock gains in somewhat more detail. Table 2 summarizes the common stock gains of the roads according to quartiles based on traffic growth in the same period. The data indicate that the stocks of roads in the upper half on traffic growth had 15 chances out of 20 of being in the upper half in common stock gains; common stocks of roads in the lower half had 15 chances in 20 of being in the lower half in common stock gains.

Table 3 shows co-efficients of rank order correlation between changes in freight traffic from 1947 to 1953 and common stock gains from February 1, 1947, to February 1, 1954. For the entire group of 40 roads the co-efficient was +0.44 but with the cumulative elimination of seven roads where there was a wide divergence between traffic record and stock gains, the co-efficient is built up to +0.69. The story told by Table 3 is essentially the same as that told by Table 2; with relatively few exceptions, there is a quite close relation between changes in the physical volume of traffic and common stock gains.

It would be interesting but not especially useful to try to explain why there was not a closer correlation of traffic growth and stock gains in the cases of the seven roads shown in Table 3. In only a few instances is it possible to be even reasonably confident that we know the precise reason or reasons for divergence. In the case of Great Northern, the traffic gain was largely in iron ore, which made relatively little impact on net income; in the case of Illinois Central, capital changes and the inauguration of dividends permitted an outstanding stock gain in spite of a mediocre traffic record; in the case of Chicago Great Western, there was a rather remarkable improvement in gross ton miles produced per freight train hour. This may have so reduced costs as to permit a better than average common stock performance; in the case of Chicago, Indianapolis & Louisville, we may hazard a guess that the reason for the divergence is simply that the stock was somewhat overvalued at the beginning date.

Table 2

Relationship Between Growth in Railroad Traffic 1947-1953 and Common Stock Gains February 1, 1947 to February 1, 1954

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Rank Order Based on Traffic Growth 1947-53 —Number of roads	10	10	10	10
Common Stock Gains 1947-1953 Rank Order — Number of Above Roads in				
Quartile 1	3	5	1	1
Quartile 2	4	3	1	2
Quartile 3	2	1	5	2
Quartile 4	1	1	3	5
	10	10	10	10

Table 3

Correlation Between Rank Order on Change in Ton Mile Freight Traffic from 1947 to 1953 and Common Stock Gains from February 1, 1947 to February 1, 1953 Class 1 Railroads

	Coefficient Correlation	Rank Order of Traffic Growth	Rank Order Common Stock Gains
Forty Railroads	+0.44		
With the cumulative elimination of the following roads:			
Illinois Central	+0.50	35	4
Great Northern	+0.54	2	30
Chic., Ind., & L.	+0.60	9	27
Chicago Northwestern	+0.63	17	40
Chicago Great Western	+0.66	36	15
Lehigh Valley	+0.68	38	20
Reading	+0.69	27	22

HOW PERSISTENT IS GROWTH?

It is perhaps useful to know that there is a reasonably closer correspondence between changes in the physical volume of traffic and common stock results in the same period. But the usefulness of knowledge of this general tendency is distinctly limited by two factors. In the first place, it is only a general tendency and in specific cases may not be true; in the second place, one cannot know in advance which roads will enjoy the best traffic gains. Presumably, an experienced analyst, by observing current car loading reports and studying current and prospective industrial shifts, as well as the geography of population changes, might be able to form a reasonably reliable estimate of probabilities. But it would certainly be helpful to be able to utilize some more specific measure or characteristic of railroad traffic growth. This, of course, raises the question as to whether or not past growth is a reliable indication of future growth in traffic.

Since the traffic of many railroads is so closely related to the ups and downs of such industries as coal, steel, and agriculture, it would be somewhat surprising to find a very close relationship between past growth and future growth over relatively short periods. But it would be equally surprising if past growth were not quite closely related to subsequent growth measured over a reasonable length of time.

It is perhaps more difficult to measure traffic growth persistency than it might have been at some other times. World War II and the Korean conflict operated to disrupt and shift traffic flows. Strictly military freight was by reason of geography much more concentrated on certain roads than on others. The proportion of military freight on the Western Pacific, for example, was much higher than on other roads. Then, too, much freight that might have moved by water was shifted to the rails. These abnormal traffic shifts probably tend to obscure the growth persistency that may exist. We may hazard the opinion that there is a greater persistency in the growth factor in railroad traffic than will be indicated in the 1941–54 data.

Table 4 shows the coefficient of rank order correlation between 1941–47 traffic growth and 1947–53 traffic growth for the entire group and with the cumulative elimination of ten roads where there were wide divergences between traffic performance in the two periods. The coefficient of + 0.71 for thirty of the forty roads would seem to demonstrate a considerable degree of persistency in growth rates of railroads. True it is that roads especially dependent upon single industries (Bangor & Aroostook, D. & H., and C. & O.) or roads in areas of significant industrial changes (D. & R. G. W.) may show quite erratic growth patterns. But these are exceptions to the rule. There seems to be a measurable and significant persistency in railroad traffic growth rates.

But even if there is a degree of persistency in traffic growth patterns it may not follow that traffic growth in one period is a reliable guide to common stock gains in a subsequent period. Dividend changes, capital changes, changes in the structure of rates and many forces other than traffic volume, tend to influence stock prices. Table 5 summarizes the relation of traffic growth 1947–53 to common stock gains in the year from February 1, 1954, to February 1, 1955. The data here indicate that the past traffic record would have been only slightly helpful in predicting stock gains in this one-year period. The data here indicate that there were twelve chances in twenty that roads in the upper half in 1947–53 traffic growth would be in the upper half in 1954–55 stock gains. There were also twelve chances in twenty that roads in the lower half on traffic growth would be in the lower half in stock gains.

Table 6 summarizes the relation between growth in railroad traffic 1941–47 and common stock gains in the February 1, 1947–February 1, 1953, period. Here the past traffic record would have been only slightly helpful in predicting stock gains. There were thirteen chances in twenty that roads in the upper half in traffic gains would be in the upper half in stock gains. There were also thirteen chances in twenty that roads in the lower half in traffic gains would be in the lower half in subsequent stock gains.

Table 4

Coefficients of Rank Order Correlation Between Change in Freight Traffic Between 1941 and 1947 and Changes in Freight Traffic Between 1947 and 1953 for Forty Class 1 Roads

	Coefficient of Correlation	Rank Order Gain in Ton Miles 1947-53	Rank Order Gain in Ton Miles 1941-47
Forty Railroads	+0.31		
With the cumulative elimination of the following roads:			
Denver & R.G.W.	+0.38	1	35
Chic., Ind., & L.	+0.41	9	37
Bangor & Aroostook	+0.45	31	3
Great Northern	+0.49	2	28
Delaware & Hudson	+0.54	39	13
Ches. & Ohio	+0.60	33	8
Texas Pacific	+0.65	25	2
Illinois Central	+0.67	35	17
Rock Island	+0.69	22	38
Chicago Great Western	+0.71	36	21

Table 5

Relationship Between Growth in Railroad Traffic 1947-1953 and Common Stock Gains February 1, 1954 to February 1, 1955

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Rank Order Based on Traffic Growth 1947-53 —Number of Roads	10	10	10	10
Common Stock Gains Feb. 1, 1954 to Feb. 1, 1955 Rank Order—Number of Above Roads in				
Quartile 1	4	3	1	2
Quartile 2	3	2	2	3
Quartile 3	1	2	4	3
Quartile 4	2	3	3	2
	10	10	10	10

Table 6

Relationship Between Growth in Railroad Traffic 1941-1947 and Common Stock Gains from February 1, 1947 to February 1, 1953

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Rank Order Based on Growth in Traffic 1941-1947 Number of Roads	10	10	10	10
Common Stock Gains 1947-1953 Rank Order — Number of Above Roads in				
Quartile 1	4	3	1	2
Quartile 2	3	3	2	2
Quartile 3	1	3	4	2
Quartile 4	2	1	3	4
	10	10	10	10

BETTER AND POORER PERFORMANCE ROADS

Table 7 shows the rank orders of seven roads with superior traffic performance and seven roads with consistently poorer traffic records. It is probably not wtihout significance that the better performance group is made up largely of southern and western roads while the consistently poorer traffic records are without exception roads with a large stake in coal traffic.

IS THE GROWTH FACTOR OVERDISCOUNTED?

The concept of railroad traffic growth as used here is entirely relative. In the aggregate a great deal of traffic has been lost to competing forms of transportation and to industrial decentralization. The actual gains of even the best performance roads rarely exceed 20 per cent, and in the aggregate there was a slight loss from 1947 to 1953 in spite of substantial industrial expansion.

But the profit-making capacity of railroads has not necessarily been impaired by this slight traffic loss. The great increase in gross and net ton miles produced per freight train hour in recent years (see Table 1) has been astonishing. To some extent, too, the reduction in physical volume of traffic has been deliberately sought through abandonment of uneconomical and unprofitable branch lines.

The investor's problem is not only to identify the roads with growth characteristics but also to decide whether current stock prices overdiscount this factor. How much in the form of lower yields and higher price-earnings ratios can reasonably be paid for the better performance rails?

NO SIGNIFICANT DIFFERENCES

The data in Table 1 indicate no significant differences in current yields and price-earnings ratios between stocks in the quartiles arranged according to common stock performance. But there is by no means a perfect correlation between traffic record and common stock gains. It would be more significant to measure yields and price-earnings ratios of the better performance and poorer performance groups listed in Table 7. On the basis of February 1, 1955, prices, and dividend rates and 1954 earnings, the yields and price-earnings ratios for these groups were as follows:

	Yield	Price-Earnings Ratio—1954 Earnings	Payout Ratio on 1954 Earnings	Per cent of 1954 to 1953 Earnings
Better Performance Group	4.9	10.6	46.0	89.1
Poorer Performance Group*	6.0	12.6	76.0	66.0

*excluding Central R.R. of N. J., which had zero earnings and paid no dividend.

There is no evidence of overdiscounting here. It is true that the yield on the poorer performance group was higher than the better performance group, but the difference is not great. The better performance group actually sold at a lower multiple of earnings than the poorer performance group.

COAL LOADINGS UP IN 1955

One factor that complicates the analysis is that the poorer performance group is made up of coal railroads. The coal traffic record of recent years has not been good, but so far in 1955 coal loadings have turned rather vigorously upward. The somewhat higher price-earnings ratio for these coal roads may reflect hope for a turn for the better in the coal industry.

Table 7

Rank Order in Traffic Performance in Two Periods of Better Performance and Poorer Performance Roads

Better Traffic Performance	Rank Order Changes in Ton Mile Traffic 1941-47	Rank Order Changes in Ton Mile Traffic 1947-53
Seaboard Air Line	1	6
Atlantic Coast Line	4	5
Union Pacific	6	7
Gulf, Mobile & Ohio*	12	3
Southern Pacific	11	4
St. Louis & S. F.	9	11
Kansas City Southern	5	12
Poorer Traffic Performance		
Lehigh Valley	39	38
Virginian	34	40
Central of N. J.	36	34
Reading	25	37
Norfolk & Western	31	32
Pennsylvania	33	30
Erie	32	29

*including the Alton

Very little analysis is required to demonstrate the considerable importance of dividends and payout ratios. The data in Table 1 show clearly that dividend policy is closely tied to common stock performance. Only two of the top ten roads on common stock performance were on a dividend basis on February 1, 1947, and all were on a regular dividend basis February 1, 1954. In the top quartile, only Nashville, Chat. & St. L. and Northern Pacific were dividend-paying roads in 1947.

It is not the purpose of the present inquiry to examine the impact of the dividend factor on common stock results in great detail. Nevertheless, it is clear that dividends play an important role in railroad stock valuation.

SUMMARY

In spite of the fact that in the aggregate the physical volume of railroad traffic has not been expanding, there are wide differences in the growth rates of particular railroads. While railroad growth rates are probably less stable than growth rates in industrials, there is, nevertheless, a significant degree of persistency in the growth rates of railroads.

Since the evidence indicates that current market prices place little premium on growth records, it seems clear that growth is a somewhat neglected factor in railroad analysis.

* * *

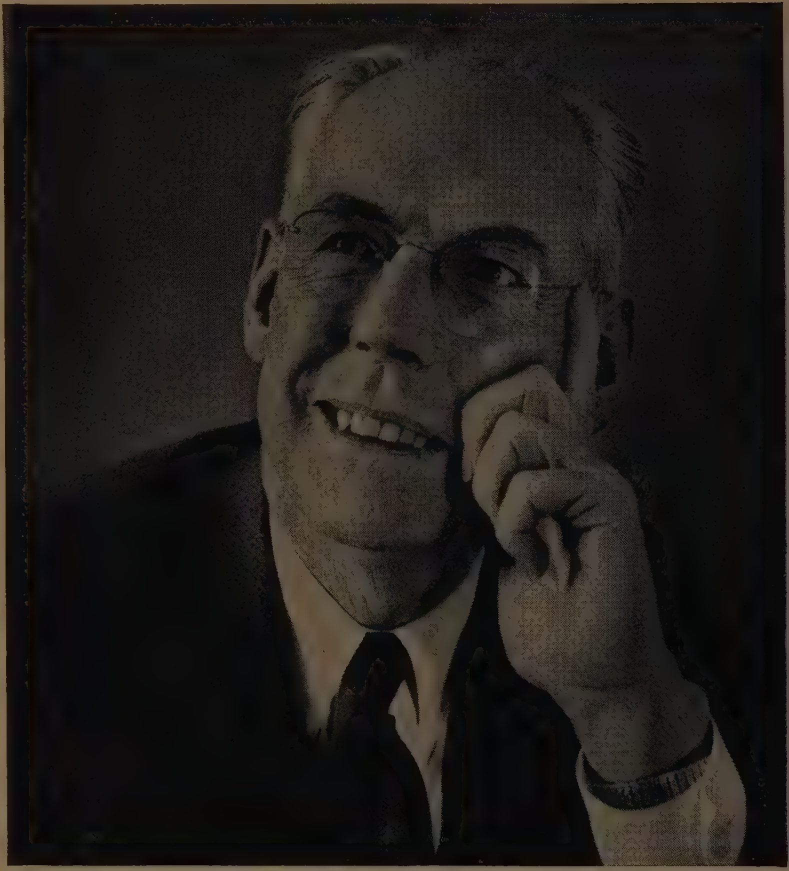
"Consolidation of railroad properties offers an exceptionally favorable opportunity to increase capitalization surreptitiously."—*William Z. Ripley*

"As a device for merely postponing trouble, note issues are in bad repute."
—*William Z. Ripley*

"When roads were built for which the business was inadequate, the managers were likely to seek support by entering upon competition for business."
—*First Annual Report of the Interstate Commerce Commission*

Clare Gard

Do you throw it away or make it pay?

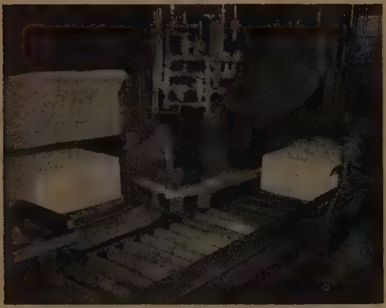


CLARE GARD, PROCESS ENGINEER—THIRTY-FIVE YEARS WITH UNION OIL.

“You’ve heard it said that necessity is the mother of invention?

“Seems to me plain everyday American initiative is pretty inventive, too. Take the way Union Oil got into the dry ice business.

“Union, you know, supplies much of the natural gas used in Southern California. Well, some years back, we needed to increase the heating value of our gas as it came from the field.



DRY ICE AT THE CUTTING MACHINE.

“We had a choice. We could enrich our product by adding other gases to it. Or we could accomplish the same thing by removing the CO_2, or carbon dioxide, from it. It was purely a matter of economics.

“We experimented removing the carbon dioxide with a process that had, till then, been used for quite a different purpose. It proved so effective it paid us to take out the carbon dioxide, even if we were to throw it away after we got it out of the gas.

DRY ICE PACKAGED FOR SHIPPING.

“But that’s the point. Instead of throwing the CO_2 away, we surveyed the dry ice industry, built an $800,000 plant at Santa Maria, and converted our waste carbon dioxide into dry ice.

“That was 1948. Since then we’ve produced and sold over 102,000 tons of dry ice. And the plant’s about paid for. See what I mean by American initiative?”

* * * *

Part of the initiative and inventiveness was Gard’s, certainly. He was Process Engineer on the Santa Maria project.

A subsidiary company of ours has since built an ammonia plant which also makes dry ice. Union Oil is now the largest producer of this product west of the Mississippi.

So long as you and Gard and all of us continue to enjoy the encouragement and rewards of America’s free competitive economy, this kind of inventive initiative will thrive.

YOUR COMMENTS ARE INVITED. *Write: The President, Union Oil Company, Union Oil Building, Los Angeles 17, California.*

Union Oil Company OF CALIFORNIA

MANUFACTURERS OF ROYAL TRITON, THE AMAZING PURPLE MOTOR OIL

The Price-Earnings-Variable Characteristics

LEWIS C. WILCOXEN

THIS IS AN ACADEMIC DISCUSSION in which the quarto of charts engraves the salient relationship of stock earnings and stock prices and their allied and derived characteristics. They chart in different ways the inherent market characteristics of the stock averages currently in the Dow Jones industrial and Dow Jones railroad lists for the period 1920–45, inclusive.

The following stocks were omitted from the industrial ist because of unsatisfactory comparative data: Chrysler, 1920–24; General Foods, 1920–27; Goodyear, 1920–23; Loews, 1920–22; National Steel, 1920–28; Procter & Gamble, 1920–23; Union Carbide, 1920; United Airlines, 1920–34. The data employed are *not* adjusted for the numerous stock splitups nor stock dividends which occurred.

Figure 1*a* is scaled logarithmically with respect to both earnings and prices, each in dollars per share. In order to ccommodate negative earnings, the log scale with respect o earnings was offset by plus 10.

Thus, on the actual log scale of earnings, log 8 was designated as minus 2, log 9 as minus 1, log 10 as zero, and so on. The chart is the scatter diagram of the prices-earnings relationship for the twenty-six-year period in which each circle and each square set forth the average relationship for the industrials and the railroads for the nscribed years.

Note how both squares and circles cluster along respecive correlation lines, which are shown full and dashed. But note also the manner in which railroad circles for years 1940–44 wander from the correlation line. That is one that proves the rule!

TWENTY-SIX-YEAR PERIOD

Let us scan Figure 1*a* for the significant. The respective correlation lines cross the earnings-equals-zero at market prices 36 and 29, respectively, for the industrials and the rails. These levels *may be* interpreted as the long-term price placed by the market on the respective asset values. They are the twenty-six-year period composite capital ("basic") prices, as determined by "responsible opinion." Fickle as they sometimes appear to be, the most authoritative expressions of responsible opinion of security values are the current market prices. These capital prices may be thought of as the market equivalents of what sharp-penciled accountants call book values. The twenty-six-year average book values were industrials 89, and railroads 158. It is a bit disconcerting that the derived capital ("basic") values are but 40 and 18%, respectively, of the book values.

On Figure 1*a*, the correlation lines above the levels of capital ("basic") prices show, at each earnings point, the average relationships of earnings to market prices, and of earnings to capitalized earning prices, the lasts being the firsts, less the capital prices. Obviously the earnings must determine the prices.

EARNINGS AFFECT ON PRICES

Although it falls outside the scope of this discussion, it should be understood that earnings affect prices through dividend rates, the actual, supplemented with the potential, and both stabilized by cash and securities reserves. Thus, these latter factors are what the chemists call the catalytic agents, the intermediate agents through which earnings activate their capitalized and market prices.

To understand better the significance of Figure 1*a* the same data have been recharted on arithmetic-scaled Figure 1*b*. It is interesting to note that, as earnings rise from the minimum, the price increases at a more rapid rate. As earnings increase toward their maximum, the relationship is reversed, prices increasing at a much slower rate than earnings.

This, of course, is true on both Figures 1*a* and 1*b*, but is more readily apparent in Figure 1*b*, where the earnings-price relationship appears as a "lazy S" curve. Viewed critically, there is probably no great advantage in the use of the logarithmic over the numerical scale.

Figure 1 overcondenses the relationships of the various price factors, a fact that becomes apparent from Figure 2.

Figure 1.

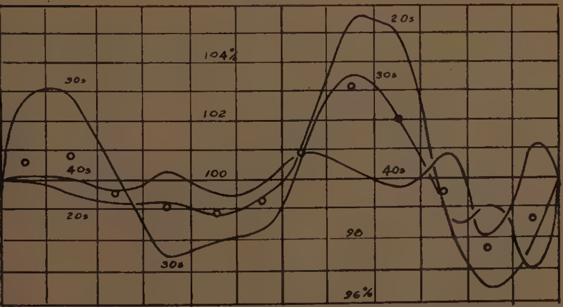


Figure 2.

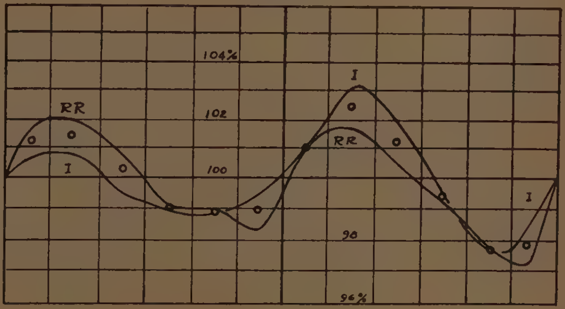
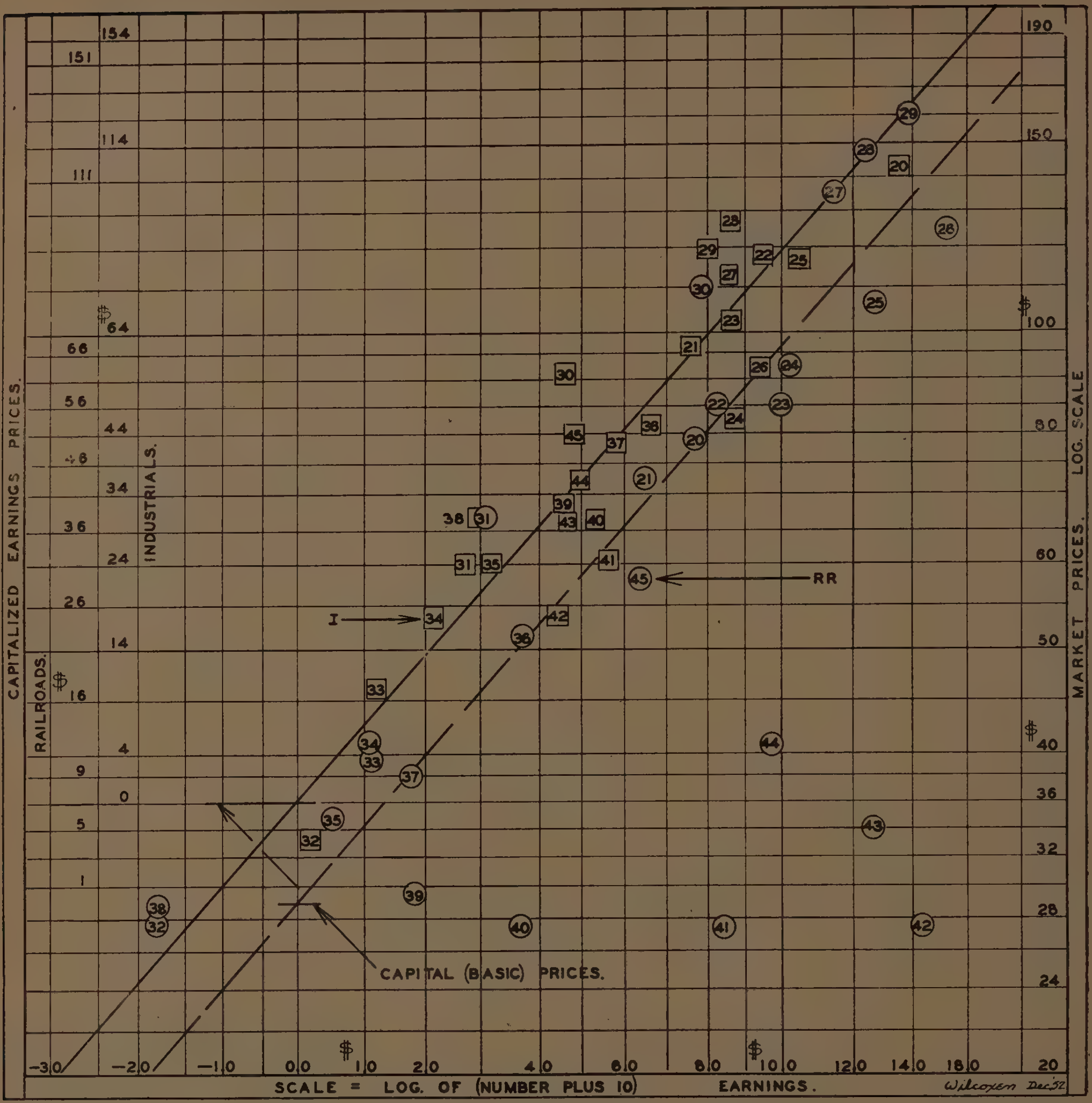


Figure 1a. Dow Jones industrials and Dow Jones railroads price-earnings characteristics.



Here, the industrial prices have been unraveled from its Figure 1 correlation line, and strung out in a time series. The scale of Figure 2 is arithmetic for the time series 1920–45, while the vertical is the logarithmic scale of earnings.

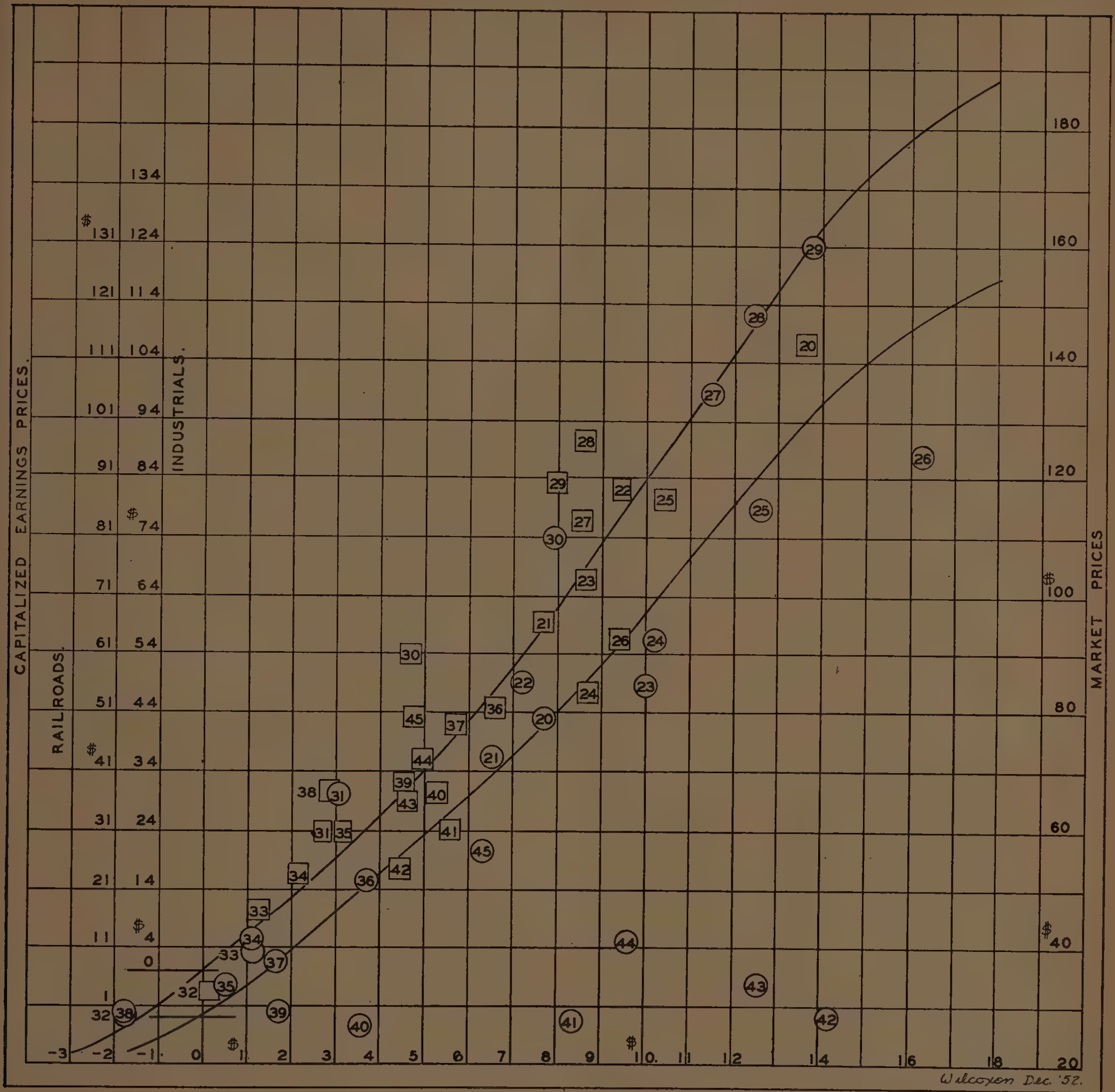
The result is a sort of relativity table on which, at each level, the earnings per share are the index. On the same levels are tabulated the corresponding data, as taken off of Figure 1*a*, the market prices, capitalized earnings.

For instance, for the year 1929, it may be noted that earnings were $9.80; the market price (correlationed) $116, and the capitalized earnings price $80. On the same line, it may be observed that the derived price-earnings variables are 11.8 and 8.2%. The "correlationed" price is obtained from Figure 1 where the actual earnings–market-price co-ordinate is projected on the correlation line, vertically to its closest point. This adjusts each annual earnings–market price to the average relationship.

The reader is cautioned that the chart of "correlationed" prices (solid black squares), is not a true time series, the data of each year being independent of those of all other years. A similar table could, of course, be prepared for the Dow Jones railroads.

If you are music-minded, you may prefer to visualize Figure 2 as a musical score, with earnings as the notes and

Figure 1*b*. Figure 1a transgraphed (arithmetic scale).



the years as the bars. For each year there is an earnings note, with which all the other variables of that year are in harmony.

The tabulated data of Figure 2 have been transgraphed to Figure 3, where the significance of the various characteristics becomes clearer to the nonlogarithmic eye. Mathematically, it is of interest to note that the price-earnings-variable curve for the industrials is expressed by the modified hyperbolic equation: (Market price + 36) ÷ (earnings per share + 10) = C. The railroads would be represented by a similar equation and curve. For a somewhat similar curve of the market price–earnings-variable, derived by a different technique, see "A Stock Price Yardstick," Robert W. Storer, THE ANALYSTS JOURNAL, volume 10, Number 4, August 1954.

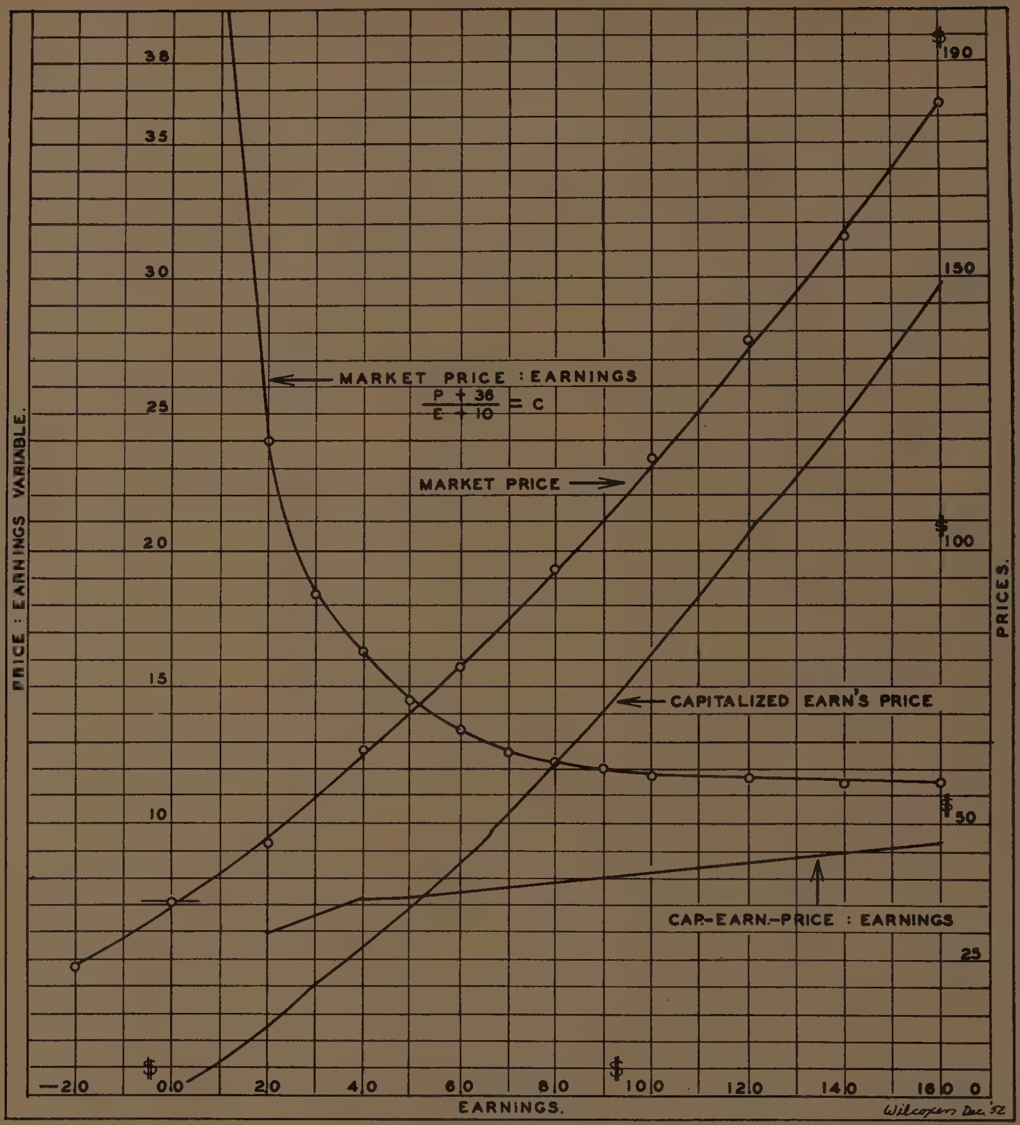
OBSERVATIONS

The following observations are more or less obvious:

1. Stock prices are the sum of their capital ("basic") price and the price of capitalized earnings (Figure 1). Together they make the market price.

2. The price-earnings variable of capitalized earnings varies moderately, increasing as earnings increase (Figure 2). For Dow Jones industrials, the price-earnings variable increased from 6.0 to 9.3 as earnings increased from $2 to $16 per share.

Figure 3. Dow Jones industrials price-earnings and related curves.



3. When the capital ("basic") price is included, the resulting market price-earnings-variable trend is reversed (Figures 2 and 3). In this relationship, as earnings increase, the corresponding price-earnings variable decreased from theoretical infinity at earnings equal zero to 11.6 when earnings equaled $16 per share.

4. Capital ("basic") prices should be expected to remain constant, except as capital factors change. They should respond to changes in the number of shares outstanding, splitups, retained earnings, and other corporate financial changes. Thus, the basic price of any stock will depend on the financial factors values of the corporation. (This thought is unsupported statistically.)

5. The market price-earnings variable is *dependent* of the two variables: market prices and earning rates. As a dynamic factor determining the course of the market, therefore, it is wholly without significance. (This is really the smash conclusion.)

6. The preponderant factor in determining market prices is earnings. For the Dow Jones industrials (Figure 2), the median average price was 80, compared with an average book value of 89, and the basic price was 36. From this may be deduced that 55% of the average market price was based on earnings. It should be observed also that the amplitude of the quartile of prices above to below the median price was 50% of the median market price. Hence, the amplitude of the average price swing was the result, almost exclusively, of changes in earnings.

7. Over longer periods, average earnings are largely determined by capital ("basic") prices. For capital, in the

forms of plant, equipment, working capital, and organization, is the fountainhead of flow of earnings, which will be built up or allowed to run down as earnings (actual or anticipated) increase or decrease (a philosophical and statistically unsupported observation).

8. The "stability" of market prices is the result of its capital ("basic") prices. On the downside, they act as the market's rubber bottom. On the upside, they are the base to which earnings, and, consequently, market prices are tied elastically (another unsupported observation). For an able presentation of this effect, see "Some Aspects of Price-Earnings Ratios," Nicholas Molodovsky, THE ANALYSTS JOURNAL, volume 9, number 2, May 1953.

Finally, it should be stated that only static relationships have been presented in this discussion. If they have any forecasting significance whatever, it remains to be demonstrated by testing for dynamic relationships.

The Dow theory, a loose expression of a dynamic relationship, is rivaled by the "point and figure" technique. Buy the "strong" and sell the "weak" stocks is another loose expression of a dynamic principle. For a rather elementary but precisely methoded market dynamic study, see my article, "The Market Forecasting Significance of Market Movements," *Journal of the American Statistical Association,* volume 37, September 1942.

Which one may be president?

One of these employees may some day be president of Armco. That's the kind of company it is.

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INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 161 of fifty cents (50¢) per share on the common stock payable July 15, 1955, to stockholders of record at the close of business on June 15, 1955.

GERARD J. EGER, Secretary

PACIFIC GAS and ELECTRIC Co.

DIVIDEND NOTICE

Common Stock Dividend No. 158

The Board of Directors on June 15, 1955, declared a cash dividend for the second quarter of the year of 55 cents per share upon the Company's common capital stock. This dividend will be paid by check on July 15, 1955, to common stockholders of record at the close of business on June 27, 1955. The Transfer Books will not be closed.

K. C. CHRISTENSEN, Treasurer

San Francisco, California

Manufacturers of AE Wall & Floor Tile

AMERICAN ENCAUSTIC TILING COMPANY, INC.

COMMON STOCK DIVIDEND

Declared July 20, 1955

15 cents per share

Payable August 30, 1955
Record Date August 16, 1955

America's OLDEST Name in Tile

The Passenger Deficit:

A Look at the Facts

LOYD J. KIERNAN

WHAT IS USUALLY REFERRED TO as "the passenger deficit" is the difference between railway operating revenues, assignable to passenger and allied services, and operating expenses, rents, and taxes, assignable to passenger and allied services. The revenues on this basis in 1953 were $1,416 million. The expenses, rents, and taxes were $2,121 million.

The difference—the so-called passenger deficit—is $705 million. This figure was larger in 1953 than in any preceding year, but the corresponding figure approached or exceeded $650 million in 1952, 1951, and 1949.

A deficit of any kind or any amount is to be treated with respect and alarm, and I would be the last to suggest a complacent or facetious attitude on this matter. At the same time, nothing is gained by magnifying any problem beyond its just proportions. Much that is said about this so-called deficit seems to me to have been thus magnified.

The first fact meriting attention is that this "deficit" does not by any means signify or imply that the railroads paid out $705 million more for passenger service in 1953 than they took in. Neither does it mean that the railroads would have been better off by $705 million if they had operated no passenger service at all. The truth is that this $705 million represents largely a bookkeeping procedure.

ICC PRESCRIBES SEPARATION

The Interstate Commerce Commission prescribes in its accounting regulations a separation of all operating expenses, rents, and taxes between freight and passenger. This separation is factual for such items as train and yard service, where charges for wages, fuel, and materials can be segregated according to the type of service involved.

However, a great many items of operating expenses, including train dispatching, signal operation, and the great preponderance of all maintenance-of-way expenses, apply to freight and passenger service jointly. These expenses are allocated between the two types of service on bases prescribed by the ICC. The result is that a certain part of such costs as general roadway maintenance, bridge upkeep, and maintenance and operation of signals and communications is charged to passenger service.

All the expenses thus charged to passenger service obviously would not be saved if this service were abolished. In regard to some charges, it is doubtful if any considerable saving could be made. For such charges, the passenger deficit simply means that freight service is charged with less than it would have to bear if there were no passenger service.

To state this another way, doing away with passenger service would merely transfer to freight service some costs now included in the so-called passenger deficit of $705 million. It must follow, therefore, that a considerable measure of fallacy is involved in assuming or saying that freight service "was burdened" to the extent of $705 million in 1953 on account of passenger service.

Of course, it is always desirable that every part of an operation—railroad or any other—should be able to bear its full part of the direct and overhead expenses of the enterprise. On the other hand, it would be a costly error to embrace the theory that any service not carrying its full share of direct and overhead expenses should necessarily be relinquished. The real test of whether an operation is meritorious is whether it pays all its out-of-pocket expenses and contributes some share toward the general overhead expenses of the enterprise.

From this standpoint, passenger service is considerably more meritorious than might be inferred from much of what is said about its deficit. Passenger service in 1953 took in $1,416 million.

Operating expenses, taxes, and rents solely related and directly chargeable to passenger service totaled $1,454 million, exceeding the revenue by only $38 million. Dining service alone accounts for $29 million out of this $38 million—but we all know that the returns from dining service are not always reflected in the dollar results of its operations.

Moreover, both the revenue figure of $1,416 million and the expense figure of $1,454 million include the operation of commutation service. Revenues from this service in 1953 were $93 million.

EXPENSES EXCEEDED REVENUES

Expenses of the service are not separately computed, but it is safe to say that they considerably exceeded the revenues. One might even hazard the guess that commutation service alone would more than account for the $38 million difference between direct revenues and direct expenses of passenger service.

Commutation service in nearly all instances was initiated before the time of the automobile, when cities and suburbs depended for development on the availability of low-cost rail service of this type. The automobile has taken away from the railroads enough of this traffic to make the service unprofitable, while leaving enough to make abandonment troublesome or impossible.

I doubt if any railroad breaks even on commutation service. I would even doubt that any type of operation could make ends meet for this service. A ceiling for fares is set by municipal transport operated at a loss or by what the passenger will pay instead of driving his own car.

Expenses are necessarily high because so great a proportion of the total traffic load is concentrated within relatively few hours night and morning. One railroad estimates that, of 160 coaches in this service, two thirds make only one round trip a day. Another estimates that, of 386 commuter cars, 91 per cent are idle 20 hours of each day.

The time spread in rush-hour commuter operations is such that some overtime pay for crews is almost certain. Thus, the economics of commuter service just do not lend themselves to profitable operation.

If it be true, as I have theorized, that commutation service would more than account for the $38 million deficit between direct passenger revenues and direct expenses, it follows that other types of passenger service on the whole are remunerative, paying their own way and making some contribution to general overhead. However, we can narrow the matter down even further.

It is common knowledge that, on the whole main line, through trains are more remunerative than branch and feeder trains—what we used to call locals. Almost any passenger traffic officer could put his finger on one or more trains known to be unprofitable, which he would abandon if he could.

SYMPATHETIC UNDERSTANDING

We all know why many of these trains continue on the timetables. Railroads will continue to plug away at getting permission to abandon such trains. Judging by the latest report of the National Association of Railroad and Utilities Commissioners, entitled "The Railroad Passenger-Deficit Problem," there is increasingly sympathetic understanding by these regulatory authorities of the need and importance of being realistic in regard to passenger-service abandonments.

Another aspect of the $705 million deficit which is usually overlooked is that, at its very worst, the so-called deficit would be borne by the railroads only to the extent of 48%. Taken at face value, this deficit is, by definition, a deduction from income taxes payable on earnings from other service.

In other words, the deficit is before income taxes. If, for example, there is income from freight service of $1,000 million and a deficit from passenger service of $700 million, the 52% income tax on the freight service, or $520 million, would be reduced by $364 million on account of the passenger-service deficit. Thus, the income tax payable by the railroad would be only $156 million, instead of the $520 million payable on the freight earnings alone.

This means that the net passenger deficit in 1953, after allowance for income taxes, was $338 million, instead of the $705 million usually cited. At its very worst, any passenger deficit can affect railroad net income only to the extent of half its face amount, after allowance is made for income tax.

According to Mahan, Napoleon remarked once that one of his admirals had "made himself a picture to scare himself with." Perhaps something of the same nature has been done with the "passenger deficit." It is largely a creature of accounting method, its causes are known and therefore could be cured if the public were willing, and, at worst, the impact of the deficit on railway net income is only half as much as the figures would suggest.

Newport News Shipbuilding and Dry Dock Company

Quarterly Statement of Billings, Estimated Unbilled Balance of Major Contracts and Number of Employees

	Three Fiscal Months Ended		Six Fiscal Months Ended	
Billings during the period:	**June 27, 1955**	**June 28, 1954**	**June 27, 1955**	**June 28, 1954**
Shipbuilding contracts	$25,763,214	$33,097,588	$47,167,329	$59,038,163
Ship conversions and repairs	2,871,715	9,378,565	5,303,291	17,228,812
Hydraulic turbines and accessories . . .	1,710,522	1,272,567	4,946,646	2,782,615
Other work and operations	4,658,189	3,981,067	8,105,930	6,403,045
Totals	$35,003,640	$47,729,787	$65,523,196	$85,452,635

	At June 27, 1955	At June 28, 1954
Estimated balance of major contracts unbilled at the close of the period	$143,669,719	$221,564,875
Number of employees on roll at the close of the period	12,854	14,811

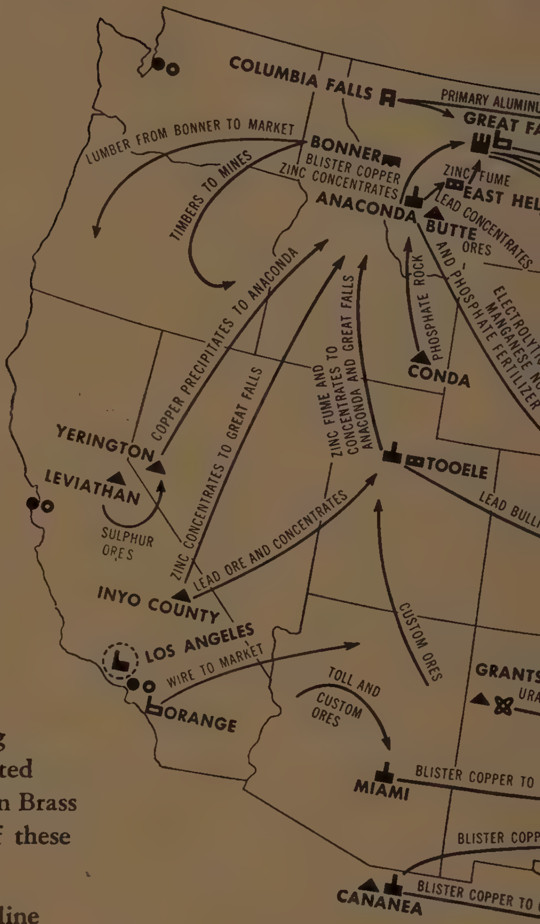
The Company reports income from long-term shipbuilding contracts on the percentage-of-completion basis; such income for any period will therefore vary from the billings on the contracts. Contract billings and estimated unbilled balances are subject to possible adjustments resulting from statutory and contractual provisions.

By Order of the Board of Directors
R. I. FLETCHER, *Financial Vice President*

July 27, 1955

AnacondA

Why ANACONDA has dropped "COPPER MINING" from its famous name!



For more than 60 years, the name "Anaconda" has been symbolic of copper. It still is. And it *will* continue to be—for a long, long time to come.

But the skills that made "Anaconda" a great name in copper have carried into many other fields. For years it has been an important producer of zinc, lead, silver, gold, and manganese. Recently uranium was added, and Anaconda operations in this vital field are now substantial and growing. This year primary aluminum will be produced.

Anaconda operations have not been limited to "mining" either. Smelting was a 19th century activity, and soon refining was to be undertaken. For many years a wide range of fabricated mill products have come from two subsidiaries, The American Brass Company and Anaconda Wire & Cable Company. Both of these subsidiaries will be fabricating more and more aluminum.

Before long, in fact, Anaconda will have the most complete line of products—copper, brass, aluminum, and many others—in the entire non-ferrous metal industry.

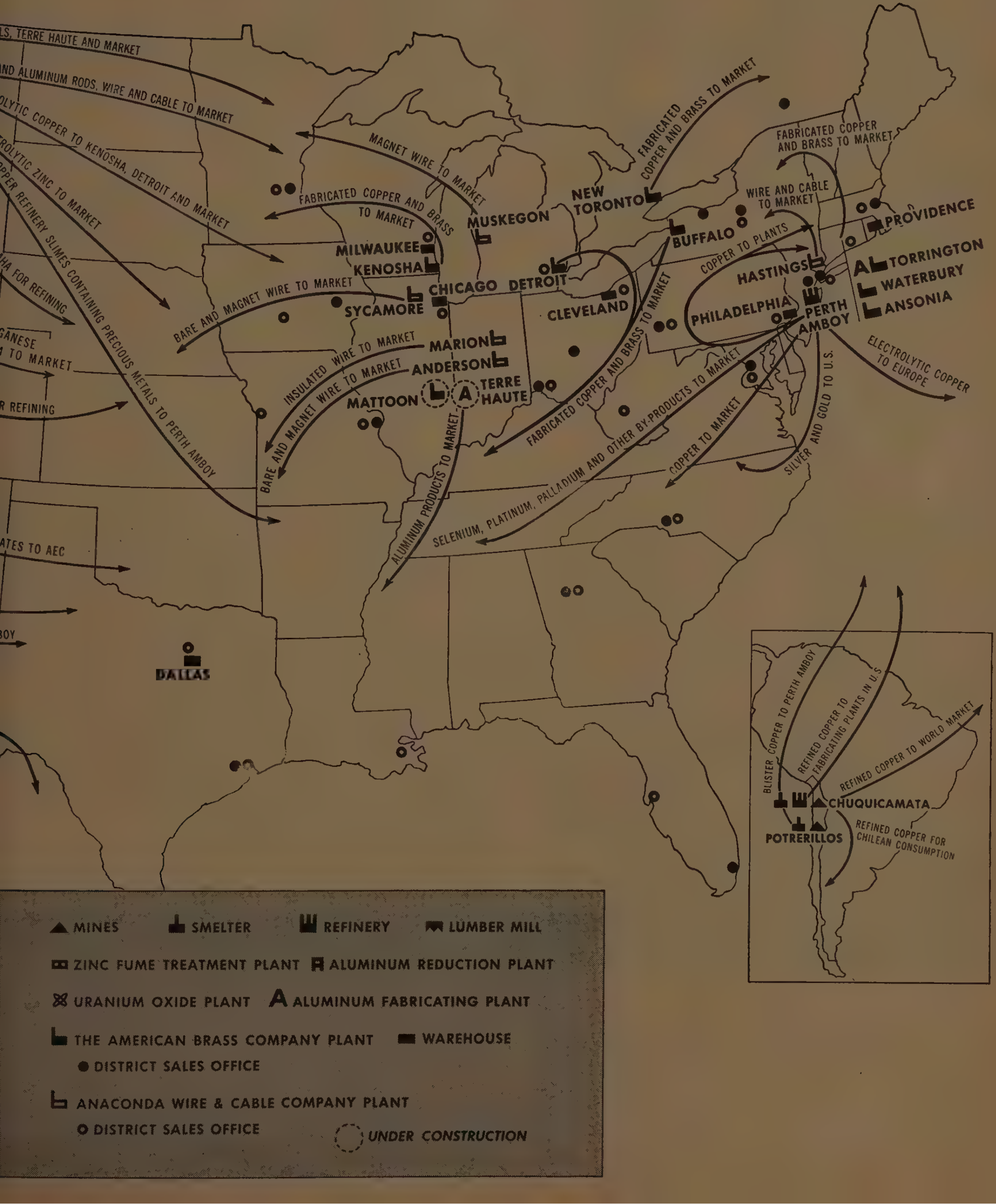
The old name just didn't cover this wide range of operations. Yet "Anaconda Copper Mining" had a solid ring to it, and the name was proudly carried. But so shall be the new name, THE ANACONDA COMPANY, whose more than 38,000 employees intend to carry on the same tradition of service that "Anaconda" has always stood for.

55238A

The ANACONDA Company

The American Brass Company
Anaconda Wire & Cable Company
Andes Copper Mining Company
Chile Copper Company
Greene Cananea Copper Company
Anaconda Aluminum Company
Anaconda Sales Company
International Smelting and Refining Company

changes its name


LS, TERRE HAUTE AND MARKET
ND ALUMINUM RODS, WIRE AND CABLE TO MARKET
OLYTIC COPPER TO KENOSHA, DETROIT AND MARKET
ROLYTIC ZINC TO MARKET
OPPER REFINERY SLIMES CONTAINING PRECIOUS METALS TO PERTH AMBOY
HA FOR REFINING
GANESE
TO MARKET
R REFINING
ATES TO AEC
BOY
MAGNET WIRE TO MARKET
FABRICATED COPPER AND BRASS TO MARKET
BARE AND MAGNET WIRE TO MARKET
INSULATED WIRE TO MARKET
BARE AND MAGNET WIRE TO MARKET
ALUMINUM PRODUCTS TO MARKET
FABRICATED COPPER AND BRASS TO MARKET
FABRICATED COPPER AND BRASS TO MARKET
FABRICATED COPPER AND BRASS TO MARKET
WIRE AND CABLE TO MARKET
COPPER TO PLANTS
SELENIUM, PLATINUM, PALLADIUM AND OTHER BY-PRODUCTS TO MARKET
COPPER TO MARKET
SILVER AND GOLD TO U.S.
ELECTROLYTIC COPPER TO EUROPE
MILWAUKEE
KENOSHA
MUSKEGON
CHICAGO
DETROIT
SYCAMORE
MARION
ANDERSON
MATTOON
A
TERRE HAUTE
NEW TORONTO
BUFFALO
CLEVELAND
HASTINGS
PHILADELPHIA
PERTH AMBOY
PROVIDENCE
A
TORRINGTON
WATERBURY
ANSONIA
DALLAS
BLISTER COPPER TO PERTH AMBOY
REFINED COPPER TO FABRICATING PLANTS IN U.S.
REFINED COPPER TO WORLD MARKET
CHUQUICAMATA
POTRERILLOS
REFINED COPPER FOR CHILEAN CONSUMPTION
▲ MINES
SMELTER
REFINERY
LUMBER MILL
ZINC FUME TREATMENT PLANT
ALUMINUM REDUCTION PLANT
URANIUM OXIDE PLANT
A ALUMINUM FABRICATING PLANT
THE AMERICAN BRASS COMPANY PLANT
WAREHOUSE
● DISTRICT SALES OFFICE
ANACONDA WIRE & CABLE COMPANY PLANT
○ DISTRICT SALES OFFICE
UNDER CONSTRUCTION

GOING PLACES *is always easier with Cities Service...*

Helpful directions to travelers on major turnpikes is just one small reason why the green-and-white emblem renews its welcome daily.

CITIES SERVICE

A Growth Company

A New Responsibility for Management

ALEXANDER PINNEY

TESTIMONY BEFORE THE Fulbright committee "studying" the stock market included, as expected, generous portions of that great American tonic — optimism. A succession of prominent financiers, industrialists, and economists voiced confidence in the future of the United States and opined that business was "fundamentally sound."

Only one witness—a college professor—was indiscreet enough to express bearishness, and he was promptly tagged an enemy of society, probably a Democrat and possibly even a Communist. Yet all he really said was that the American success story had had some pretty serious interruptions, and that nothing in our economic history indicated that the advances of the future would be in a straight line.

Considering the fact that business cycles do occur with a certain degree of regularity and that large doses of optimism inevitably contribute to the overbuilt and overbought condition which is the prelude to a major readjustment, it is too bad that a realistic observer who views the immediate future with alarm is treated as a reprehensible character, whereas the blindest bull waving his arms in a generally westerly direction and saying, "How can you miss in this great land of ours?" is something of a national hero. Possibly extravagant expressions of confidence by business leaders do more harm than good, by inducing masses of people through overconfidence to mortgage their future too far ahead, and perhaps also because of the hypnotic effect of such statements on the speakers themselves.

At any rate, the lot of the bear in a bull market is not a happy one. Nobody else wants to talk about depressions, and certainly nobody does anything about them until they are well started.

AGENCIES SPRING INTO ACTION

Then civic agencies spring into action, farm prices are bolstered by Government supports, and public works programs are set in motion. Moratoriums are instituted, and the whole dismal chain of efforts to prime the pump and alleviate unemployment by made work is reactivated. Concurrently, a running obbligato of statements issues from business leaders, assuring the public that the country is still fundamentally sound, and not to worry if their cars and homes are taken from them for inability to meet the payments.

Assuming for the moment that it is necessary for us to have some sort of economic purge every so often, if only to correct excesses, can the more extreme downswings of the business cycle be prevented? Can they be foreseen far enough in advance so that effective countermeasures can be started earlier, perhaps by attacking the excesses while the boom is still in progress?

These are questions that are of increasing importance today. The very complexity of modern industrial society, which makes for a high standard of living, may also lead in the future to more and more serious maladjustments.

An economy based on mass-production methods and a high degree of mechanization, aided and abetted by banking laws that made a debt a basis for credit, and by virtually unlimited consumer financing, can run amuck on its own power when the public is optimistic. Alas, in the wake of a prolonged period of forward buying by consumers, comes inevitably the familiar expression, during which excessive credits are liquidated, overproductive capacity is eliminated, and there is a general return to reality.

PURCHASING POWER IMPORTANT

Mass purchasing power of the American people is so enormous that its use or nonuse plays an important part in the extent of the business cycle. Psychology is a determining factor.

Americans like to spend, and shopping with millions is a pastime. Spending eventually tends to run to excess, but, in the process, it stimulates production, and a spiral of expansion goes on until the breaking point is reached.

Theoretically John Maynard Keynes may have been right, in his contention that in modern society consumption comes before production, and that it is the duty of Government to create spending power when consumption falters. Practically, it would seem to work only if people are pawns in a socialistic state, rather than free human beings who are, in accordance with Lord Bryce's famous definition of democracy, exercising their inalienable right to make fools of themselves.

Walter Lippmann once sagely pointed out that, in addition to death and taxes, there is a third certainty in life—human nature. His theme happened to be world politics, and he was arguing that statesmen who had proved to be the best judges of political trends had a profound understanding of human nature, in particular of man's weakness for repeating errors in spite of the vivid lessons of the past.

Has what he said an important application in modern economics? I will attempt to show that, in the highly industrialized laissez faire societies of western Europe and the United States, knowledge of *how* peoples' minds are likely to work is vital for proper business planning; that is, if it is worth trying to prevent even worse booms and depressions than in the past.

A few years ago an interviewer asked the president of General Motors to comment on his sales outlook for the last half of the year. The surprising reply was that he had little notion about it.

Further elaboration of the answer went on to show that it was not a flippant response but was based on profound reasoning. He explained that people do not have to buy new cars if they do not feel like it; they can postpone purchases for long periods of time and get along with what they have.

The consuming public was in that mood when F.D.R. tried to coax a little spending with his dictum, "We have nothing to fear but fear." And C. E. Wilson was saying that a psychological change could make a six months' forecast of sales by any manufacturer of hard goods look exceedingly foolish.

Today perhaps half the earnings of the American family goes for the basic essentials: food, clothing, and shelter. The balance can be spent—or not—for durable goods, luxuries, travel; can be hoarded; or can be used for wise investment or foolish speculation, all depending on the mood of the moment.

Not long ago the slowness of retail trade was explained by the remark that the public was on a "savings spree." Another time commentators may be deploring excessive spending.

Compare this with the position of our grandfathers little more than one hundred years ago. Then human nature had little scope to exercise its talent for doing the wrong thing in the field of economics. It mattered little what the average man thought. If he labored from dawn to dusk, he eked out a bare existence; what to do with his disposable income never troubled him, because he had none.

How the public feels about spending has, in three or four generations, become a major eonomic factor. What has brought this all about in the space of barely one hundred and fifty years is commonly known as the industrial revolution, the application of mechanical power to factory production and transportation following the Napoleonic Wars. During the nineteenth century, the advance in individual productivity was greater than in all the millenniums that had passed since man multiplied what he could produce through human energy alone, by harnessing the original domesticated animal to a primitive plow.

INDUSTRIAL REVOLUTION NUMBER THREE

Now, we find ourselves in the thick of what the late Henry Ford called industrial revolution number three. He reckoned the invention of the first primitive tool as number one and steam power as number two.

Ford reasoned that the ability to make power mobile—capable of being carried to the work instead of the work to the power—is responsible for lifting productivity per worker in our lifetime as much as steam power plus limited waterpower had augmented animal energy early in the nineteenth century. He was talking, of course, about the internal-combustion engine, which propels tractors to do the farmer's work better and quicker, and which enables cars and trucks to speed the distribution of goods and the movement of people. And he was talking about electric power, which carries itself hundreds of miles to the work, and through multifarious applications right into the work.

Not only has mobile power taken much of the physical drudgery out of a good deal of man's labor, but our generation has benefited in other ways also from the most astounding flowering of scientific inventiveness in history. We not only fly through space; we hear through it and see through it electronically. Many of us may live to see atomic energy in everyday use or to fly around the world between breakfast and dinner.

All these wonders flow into the hands of Americans through a much more specialized and delicately balanced business organization than any hitherto known. There are many more ways that the sensitive mechanization may get out of adjustment; we are no longer a simple agrarian economy. Now there is vastly more room for faulty judgment or foolish mistakes to cause a wide circle of harm, by dislocating one segment of the economy to which others are related.

In short, the great productivity of modern industrial society has brought in its train problems that place an additional responsibility on business managers—especially the managements of the great mass-producing companies, for they must take into account the shortcomings of human nature in the aggregate. Our millions of consumer–producers do not have the intelligence to follow the wise moderate course; but rather can be counted on to stampede from one extreme to the other.

What has been an old story in the stock market has been extended to a very much larger economic area. It behooves business leaders to *counteract* these swings, insofar as possible, both by statement and by action.

Unfortunately there is too much evidence that business managements are inclined to share the failings of the mass of people, particularly on the side of overoptimism, and to compound the errors of the public in the matter of overborrowing and overexpanding in boom times. Time was when manipulation of the rediscount rate was supposed to check overexpansion or contraction. It is of little use now when our vast public at the wheel of their new-found optional spending power pay scant attention to the penny whistle of the Federal Reserve traffic cop.

No thermostatic control of the business cycle is in sight that will sway mass psychology. Also it must be admitted that, although sporadic improvised measures are instituted by political leaders to stem the tide of recession, no one, politician or businessman, is outspoken in attempts to *slow down* business by persuasion or action. Has anyone tried to cushion a boom? If any considerable number were to do so, Sewell Avery might not have had to wait so long to be right!

NO JOB FOR THE POLITICIAN

The truth is that business statesmanship, with all its advances, does not yet realize that this is no job for the politician. If it were, socialism would have arrived.

The ameliorization of the economic cycle is the business of every responsible business leader. Booms are breeders of depressions, and depressions are breeders of socialism, Government regulation, and all the things businessmen are said not to like.

Has the time come for the exercise of restraint?

1954 rounded out twenty-two years of rising business volume, and almost uninterrupted profits for most corporations. First came the recovery in the '30's from the stagnation of the 1929–32 depression, after which a breathing spell and consolidation of gains would have been in order.

Instead came renewed stimulation of our economy by World War II. After the war the Marshall Plan and ERP kept the pot boiling until Korea conveniently seized the torch.

Now the needed needling comes from the defense program, and, if the Communists cease to threaten, there is another bull argument warming up in the bullpen—believe it or not, the big baby crop! A 2 or 3% annual increment of new customers from the nurseries, they say, provides an assured demand indefinitely for the output of our factories.

But this theory blithely disregards the fact that these new consumers will necessarily be new competing producers. It disregards as well the fact that some of the countries with the highest birth rates are the poorest in the world.

Yet in the face of this and with the history of the last two decades before us, we see, instead, expansion revered above all things in the economic picture. Our business heroes are the engineers, the constructors, and the laboratory men.

Recently a full page advertisement by a publisher of business magazines blared the headline "Capital Spending Plans for 1955 . . . Here Is Good News about Business Prospects." Perhaps Walter Lippmann was right about human nature—particularly its foibles.

WARNING SIGNALS ARE APPEARING

Already a few warning signals are appearing. There is growing evidence in many industries of an excess of productive capacity, and in farm products, where the Commodity Credit Corporation is storing and lending on more surplus agricultural commodities than ever before, some of which it cannot give away! And there is growing evidence that western Europe, with a skilled population twice our own, is at last back on its feet and ready to compete, not only in world markets, but in our own as well.

My argument, of course, is that our business leaders neglect both a selfish interest and an obligation to society in not insuring against the mass error by better timing of their expansion plans. If, as they are so ready to proclaim in times of economic distress, the country is fundamentally sound, why not defer until off-years their construction programs for the good times to follow?

In the Bible the lean years were the years of depression. How paradoxical that, in modern society, hard times often coincide with periods of overproduction, whereas scarcity is good news, even to the extent of plowing under little pigs to bring it about!

Overproduction is the fault of the producer. One can, of course, appreciate the manufacturer's reluctance not to go all out with existing capacity for as long as possible, giving longer and longer credit terms to buyers as needed.

After all, a modern factory is full of wonderful but expensive laborsaving gadgets, which can produce like mad when in operation, but when idle eat more hay than all horses represented by the total horsepower of the plant. Mass production can be likened to a juggernaut contraption with only one speed, and that full speed ahead.

But how can one condone building *new* productive capacity when the economy is already overstimulated? A decision to increase plant investment at such a time is, of necessity, predicated in part (whether admitted or not) on a forecast of sales of products to people deriving spending power from the construction program of another company across the street.

This plan for two people to prosper by taking in each other's washing never really worked. And the rat-cat farm broke down because too many rats refused to be eaten. To get back to our starting point, our temperamental average consumer, instead of playing the role in which the company economist has cast him, may decline to buy.

The spiral of plant construction today has reached alarming proportions. We are building plants to make things, with which to build plants to make things, with which to build plants to make things, and so on. Economic spirals, like hurricanes, are difficult to plot accurately.

Few see them coming, but, after they have passed, the survivors crawl out of the storm cellar to survey the wreckage and make sure that it does not happen again. Some, including not a few political economists, say it cannot happen again; that the Republican, or Democratic, party (depending on who is talking) has the business cycle defeated. We are skeptical.

* * *

"The severity of many of the laws which have been enacted for the security of the revenue is very justly complained of, as imposing heavy penalties upon actions which, antecedent to the statutes that declared them to be crimes, had always been understood to be innocent."—*Adam Smith*

There's News For The Joneses Today . . .

And the Smiths, and the Browns. In fact, for all our nearly 45,000 shareholders. We keep them up-to-date on our company's activities through informative folders sent with our regular quarterly dividends, and through our Annual Report. We send them special messages during the year when important corporate events occur.

Our stockholders live not only in all of the 48 states but in many countries abroad as well. Approximately 41% are women. The average holding is 202 shares and no individual owns as much as 1% of the Company's outstanding shares.

Many thousands of investors indirectly share ownership in National Distillers through institutions holding stock in our Company—trusts, pension plans, mutual funds, banks, insurance and investment companies.

In the interest of our stockholders we have materially advanced our program of product diversification. Today, National Distillers is not only one of the country's major producers of alcoholic beverages, but has become a leading manufacturer of petrochemicals, solvents, intermediate and industrial chemicals . . . providing share owners with diversified sources of income and the Company with greater business potential, now and in the future.

National Distillers Products Corporation

NEW YORK 16, N.Y.

PRODUCT OF NATIONAL DISTILLERS

OLD GRAND-DAD · OLD TAYLOR · OLD CROW · PM · OLD SUNNY BROOK (BRAND) · GILBEY'S GIN · HILL and HILL
BELLOWS PARTNERS CHOICE · BOURBON DE LUXE · BOND & LILLARD · OLD HERMITAGE · DeKUYPER CORDIALS

OLD GRAND-DAD, OLD TAYLOR, OLD CROW, KENTUCKY STRAIGHT BOURBON WHISKIES, BOTTLED IN BOND, 100 PROOF. • PM BLENDED WHISKEY, 65% GRAIN NEUTRAL SPIRITS, 86 PROOF. • OLD SUNNY BROOK KENTUCKY WHISKEY—A BLEND, 65% GRAIN NEUTRAL SPIRITS, 86 PROOF. GILBEY'S DISTILLED LONDON DRY GIN, 100% GRAIN NEUTRAL SPIRITS, 90 PROOF. • BELLOWS PARTNERS CHOICE WHISKEY—A BLEND, 60% GRAIN NEUTRAL SPIRITS, 86.8 PROOF. • HILL AND HILL, BOURBON DE LUXE, BOND & LILLARD, OLD HERMITAGE, KENTUCKY WHISKIES.

Today's Analyst

GERSON D. LUBLIN

As just about the newest of the professions, security analysis has been going through a period of consolidation and redefinition. One might say it has come of age. Analysts now choose particular fields of investigation and perform specialized functions, a far cry from their former role of lexicon men, employed to tabulate figures and present them when asked. The change in the analysts status reflects to a considerable extent altered concepts of the purposes of Wall Street.

Much has been written on the functions of the security analyst. Classic text books, some done during the period of our own business experiences seemingly have one principal mission, namely clarifying and interpreting the objectives of this modern profession.

The time appears opportune to undertake a description of this profession, and to define not only what today's security analyst is, but also what he is not, and cannot be. It has become essential that an effort be made to establish the framework of concepts within which the security analyst may be expected to function. Every profession ultimately reaches the point at which such exposition becomes necessary; that is if the profession is to develop effectively.

The profession of security analysts has had a gradual growth. Analysts began as students of figures and statistical tabulations — this limited their ability to appraise corporate values. They soon found that an understanding of accounting was required if they were to undertake adequate interpretations of their carefully compiled figures. The next step was to use the studies undertaken by certain of the economists of our age who set the stage for the scientific analysis of business dynamics, and with these tools, analysts undertook to make reasoned judgments of business trends important to the estimating of security values.

THE HORIZON OF LISTED SHARES WIDENED

It was largely after 1900 that industrial companies began to finance their expansion needs through public sale of equities. As the horizon of listed shares widened the analyst found himself faced with the necessity of evaluating an even wider range of business activities. Two schools of thought developed. One based their hopes of future profits on "buying into a business" keeping it until full growth established its value. The other "played the market", quick turns caused by market swings. In either event the analyst was evolving into a market forecaster; was driven by circumstance into making predictions as to the potential of the entire economic structure.

In recent years the scope of the areas of knowledge in which the analyst has attempted to inform himself has broadened still further, and in fundamental ways. Today's security analyst has become a "scientist" he has reached a point at which he is expected to be able to express sound views on innumerable developments in the fields of chemistry, medicine, electronics, atomic energy, metallurgy, and other of the more difficult sciences.

This new concept, of the security analyst is a natural corollary of the age we live in. If the 20s can properly be called the heyday of the supersalesman, our own era, and particularly the past decade, represents clearly the flowering of the new scientific age. Organizations now spend vast sums for research. All that is needed is a comparison of corporate research expenditures today and in 1939 to realize how important has become the technician in the industrial background.

SCIENCE IS NOW IMPORTANT

The security analyst has been impelled by circumstances to find some meeting-ground, some area of common understanding, with the dynamic scientific world in which he functions. Even if he could, he would not live in a vacuum; he must make an effort to understand and interpret scientific advance in order to make his own function of analysis meaningful in the modern world. He must consider science one of the elements with which he deals, one which represents today's most dynamic force and, therefore, one which will have a strong bearing on the accuracy of his investment judgments.

Analysts are now faced with an outburst of new inventions, each altering the position of corporations. This poses a series of questions. Can one person, or even a group of persons, in a highly organized investment research department cover so enormous a range of knowledge in a satisfactory manner? Is it necessary that the security analyst make the effort to perform this stupendous task? How many industries can one analyst be expected to follow accurately? The Research Department Head must carry through a still more difficult assignment in that he must have a satisfactory understanding of the field in which each of his "specialists" works. Certainly the demands on the analysts have increased.

Evaluating securities is not a part-time "job." It is a very full assignment to appraise a company's past record and present status, to examine earnings and earning trends, check accounting methods, test the validity of reported book values and so on. When in addition the analyst is exposed to a whole new area of investigation brought about by scientific development, then he faces time-consuming problems. And so he must draw a careful balance between the time he can give to following an industry in a technical way, and the effort he must put into reaching conclusions as to the merits of securities in terms of the financial approach to analysis.

ANALYSTS HAVE BECOME SPECIALISTS

Specialists are the order of the day. An analyst delving into scientific problems should have technical background. In a measure it appears to be possible to define those spheres of scientific knowledge that will be most helpful to the security analyst and to eliminate aspects of investigation which are no more than window dressing.

For example, it is a truism that any company which owns a unique, well protected product or process having an important commercial and industrial application possesses an asset of major value. It is the analysts' duty to establish in his mind the uses of such an asset. Furthermore, any company whose research activities are directed toward growing and promising fields has a potential greater than that of less forward looking enterprises. This could be the foundation of an increase in corporate profits.

MAJOR CONSIDERATIONS

These are major considerations for the analyst. Obviously every bit of information, every fact bearing on company's scientific progress, could conceivably be meaningful in terms of the final value judgment. But it seems that useful judgments can be made without attempting to enter the laboratory itself, without studying every step of the manufacturing process, or attempting to follow the evolution of one chemical formula into another, or finding out exactly how a machine works, as distinct from what it does. After all, in the end it is application of the new material or the new machine that is going to determine whether or not it proves a commercial success. Scientific background of research manufacture, interesting as it may be, is for most analysts a side issue. It might be well to re-state why the security analyst requires some knowledge of science at all. He needs it to help him do his job of analysis more effectively. As in earlier periods in the history of the profession, when new needs brought about new studies involving accounting, economics and more refined statistical techniques, so today's analyst may find the most promising investment situations are those whose future rests on the benefits of science.

AGE OF SPECIALIST

Today's listings, covering innumerable industries and a wide range of sciences, have clearly brought the age of the specialist into being for analysts. But how much time should be given to this new and important market consideration? It may be a good working rule to put technical investigation in second place, and for the most part say that old-fashioned appraisal of corporate worth comes first. One should be able to interpret corporate figures, past and present. On the other hand knowing whether the company is developing important new products, usable and salable, is important. But the interest generated in seeing an absorbing production operation or laboratory demonstration should not impair the analyst's initial function — that of judging security values.

This announcement is neither an offer to sell nor a solicitation of an offer to buy these securities. The offer is made only by the Prospectus.

250,000 Shares

Scudder Fund of Canada Ltd.

Common Shares

(par value $1.00 per share)

Price $43.92 per Share*

*Price for single transactions of less than 1,000 shares. Prices are scaled down for single transactions involving greater numbers of shares.

Copies of the Prospectus may be obtained in any State only from such of the several Underwriters, including the undersigned, as may lawfully offer the securities in such State.

LEHMAN BROTHERS

August 3, 1955.

LION OIL
COMPANY

A regular quarterly dividend of 50¢ per share has been declared on the Capital Stock of this Company, payable September 15, 1955, to stockholders of record August 25, 1955. The stock transfer books will remain open.

E. W. ATKINSON, *Treasurer*

August 3, 1955.

THE FLINTKOTE COMPANY
New York 20, N. Y.

A quarterly dividend of $1.00 per share has been declared on the **$4 Cumulative Preferred Stock** payable September 15, 1955 to stockholders of record at the close of business September 1, 1955.

A quarterly dividend of $.60 per share has been declared on the **Common Stock** payable September 10, 1955, to stockholders of record at the close of business August 26, 1955.

CLIFTON W. GREGG,
Vice-President and Treasurer

August 3, 1955

This
is one of
West Penn
Electric's
area
development
ads . . .

Analysts
are cordially
invited to
refer to us
industrialists
seeking
plants or
plant sites

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Security Analysis in a Science-Oriented Society

A. MORGNER

WITH THE ENORMOUS PUBLICITY that has recently been given the future uses of atomic energy, it may well seem that the projected wonders of the near future are in need of more critical evaluation rather than further emphasis. Yet it is possible that recent accounts of them are defective not in their facts, but in the failure to appreciate the cause of these developments: the fact that our society has reached a point where it may now best be considered as a science-oriented society.

SCIENCE AND CONTEMPORARY SOCIETY

This development toward a science-oriented society has, of course, been going on for some centuries. One can date it since the Renaissance or since the industrial revolution, but it appears now to have reached a stage where it can be considered qualitatively different, rather than as just a mere compounding of scientific knowledge.

What has happened is that our society has evolved to a point where the promotion and acceptance of science has become a central objective of the society. The peoples of the Western World, and particularly of the United States, have developed a type of society that is an invention-creating and invention-using one. Our whole social organization has become increasingly designed to facilitate the growth and applications of science.

Concurrent with this, there has developed wide acceptance by the members of the society of the idea that, technologically, tomorrow will—and must necessarily—be different from today. American Point Four administrators have discovered that it is not enough to give tractors to the people of nonscientifically oriented cultures.

What is even more important is to get the populace of the underdeveloped areas to accept and use such devices. Resistance to change, even in the face of demonstrated technical superiority, can be enormous when the old ways of doing things are cherished for their own sake and when the ways of a science-oriented culture are foreign to a people.

On the other hand, the American farmer expects farming methods of fifteen years from now to be different from today, just as the American consumer expects the automobiles, or possibly autogyros, to be different. Without acceptance, invention comes to little, and history records many cases of significant inventions in Chinese and Indian cultures that died stillborn because of the lack of acceptance in such static societies.

In hand with the growing willingness of the ordinary man to accept changed ways of doing things as a regular continuing process has come a type of social organization that glorifies and facilitates scientific progress. Science and the scientist carry prestige and favor; new scientific ideas are accorded a ready hearing—in contrast with the situation four centuries ago, when odd suggestions about the nature of the universe (such as that the earth revolves around the sun) might result in the execution of the suggester, and only better than half a century ago, when ideas on the origin of man might result in social ostracism.

Today all men of ability are invited to inquire into the physical nature of our world and are honored if they add to the total knowledge. Einsteins and Salks increasingly assume a prestige reserved previously only for military and political leaders.

Science definitely is in the air, is thought and breathed, and talked about by everyone. Our future survival as a national state, we know, may depend on it. Advances in knowledge are now increasingly planned.

Polio is conquered by channeling enough talent into basic research into the matter until the problem is licked. Other diseases are expected to succumb to the same technique.

Scientific discovery and practical invention are no longer the work of hundreds of widely scattered men guided by simple curiosity and unappreciated by the rest of society. In the past twenty-five years, annual expenditures by Government, colleges, and industry on research have advanced from $150 million in 1930 to over $4 billion currently, and can probably be expected to increase at this fantastic pace so long as talent can be found.

Educators increasingly worry about young people of ability who do not get to college, not because of the injustice involved to the individual, but because of the loss of talent to society. Meanwhile, the number of people engaged in science and practical research has increased to over a million, if we include the members of scientifically trained professions like medicine.

What is really important to the future, then, is not the developments that we can expect from our present knowledge of the atom, electronics, chemistry, and the like, but that we have created a social organization that provides the conditions under which other basic additions to knowledge seem certain to be made, to be developed, and to be utilized. Where this all ends is, of course, the big question.

At least one famous economist has expressed the belief that scientific developments will eventually make the economy so fantastically productive, relative to a minimum of human effort, that in a few generations the economic problem—the problem of making a living—will virtually disappear. What men will then turn their attention to presents an interesting problem. Perhaps they may continue the advancement of knowledge, but solely and explicitly for its own sake rather than for the objective of material advancement of the society.

THE IMPACT OF SCIENCE ON THE ECONOMY AND SECURITY VALUES

But what is the significance of all this to the mundane subject of security analysis? Simply this: It may be somewhat later than we think, as far as the impact of technical advance on the value of securities is concerned.

What we must remember is that science is an on-going process, and that there is no such thing as just waiting to see how current basic scientific discoveries will work out in practical application, for behind these discoveries, and quite immediately, lie other developments, which will in turn affect these applications. Furthermore, the same factors that speed up the growth of scientific knowledge also speed up the application of such knowledge. Security prices have always reflected the discounting of future developments when these developments appeared fairly definite; but, increasingly, the basic facts to be discounted will appear much more quickly and will be subject to more violent changes due to further scientific developments than was true in the past.

IMPACT OF TECHNOLOGICAL DEVELOPMENTS

The impact of technological developments will be felt not only through the growth of new industries, the further technical development of existing industries, and the disappearance of technologically outdated industries, but also in the induced growth of those industries that show little outstanding technological development of their own. Technical advance at the rapid rate now anticipated for the future will lead to marked growth throughout the nondynamic sectors of the economy.

If automation and plastics make possible better and cheaper automobiles, television sets, and similar products, people will probably not only buy more of these items, but will be able to buy more housing and other things that may not have progressed technologically. This type of induced growth has, of course, always been at work in our economy, but its effect will now be much more marked and will turn innumerable industries into growth industries, quite apart from the matter of population increase or the industry's own technological advancement.

More important, however, as a social problem will be the fact that some industries are likely to be complete casualties of technological developments. Here the major economic policy problems of the future may arise.

The majority of competent economists now seem to believe that, although minor fluctuations in economic activity such as those of 1949 and 1953–54 may be beyond correction, marked fluctuations in employment and prices, caused by sizable excesses or deficiencies in total spending in the economy, can be counterbalanced by monetary and fiscal policy. Such policy requires that the public be willing—according to whether the condition is an inflationary or deflationary one—to accept such distasteful measures as higher interest rates, higher taxes, and Government deficits.

Unfortunately, this is not the end of the matter of major depressions, even if the economists are right and the public is agreeable. Although we may know how to prevent depressions such as our past major ones, there is no assurance that we are equipped to combat the types of economic instability that may arise out of the enormously high rate of technical change that may prevail in our economy in the future.

For example, in the future, there may be a sudden major collapse of the coal industry if very cheap atomic reactors and cheap atomic fuel are developed. At present, there is absolutely no evidence that this must occur.

Actually, a sizable new demand for coal has arisen out of the Atomic Energy Commission's huge demand for electric power. Also, the possibilities of more effective utilization of coal, along with the projected estimates of enormous increases in electric-power requirements in future years, have made the current outlook for the coal industry a modestly encouraging one.

But, if atomic power did become cheap, a huge investment in mines would be destroyed, and a half million miners would be unemployed. The reduced purchase of goods by coal investors and miners might be offset through monetary and fiscal policy, but this would not, by itself, solve the problem of what to do with the miners or how to salvage the investment in the coal industry.

In the past, of course, new industries have displaced old ones, but the soothing hand of time has generally entered to ease the transition. Thus, in early nineteenth century America, when kerosene displaced whale oil as a fuel for illumination, the process was a slow one. New whaling vessels were not built, and the depreciation funds of the whaling-ship owners found their way into the newly developing New England textile industry with little loss.

Young New Englanders sought employment in the new mills, while their elders gradually retired from the sea. No one in the industry was particularly hurt and there was no adverse effect on the economy at large.

This same story has been repeated hundreds of other times in America's economic development. Sometimes the industry involved, or at least some firms in it, has been able to take on the new technology. Thus some wagon makers became auto manufacturers.

Occasionally, however, the process of displacement has worked fast and adversely to the interests of those concerned. In a period of little more than a decade, the electric interurban railway vanished from the United States because of the automobile and the highway, and investors lost most of their capital.

Though a more rapid introduction of new developments may thus make the impact of technological developments more acute, the enormous growth of the economy may be so rapid that adjustments may be considerably eased. Thus, even relatively cheap atomic power may not be immediately disastrous to coal if electric-power consumption is advancing so rapidly that constuction of reactors can barely keep up with the new demands for power.

NEEDED INFORMATION ON RESEARCH WORK OF CORPORATIONS

All this would seem to indicate the need for an ever-increasing amount of study by the security analyst in regard to general scientific developments and the specific research being done by firms and industries. The recognition of "growth stock" by the analyst will obviously become of ever-increasing importance.

Perhaps this stock should, however, be renamed the "technologically dynamic" stock, since, with great population increase and the over-all increase in production, growth should be a rather common phenomenon. To date, the concept "growth stock" seems to amount to little more than the recognition of stocks that have shown a steady increase in sales and earnings in the past. The stocks today labeled as "growth stocks" should be re-examined so as to find out whether they really possess the technological potentialities to entitle them to be called "technologically dynamic" stocks.

THOROUGH INVESTIGATION DESIRABLE

The security analyst can do much to increase the investor's knowledge of such stocks by a more thorough investigation of the research activities of businesses. To begin with, the analyst should note, in the description of the business, how research is handled.

If the corporation has no research department, this should be noted, along with information as to whether such work, although carried on, is simply not formalized in the firm's organization. If the firm depends on those who sell its goods or its trade organization to carry on research, this should be mentioned and the work of these outsiders described.

Next, some evaluation of the character and quality of the research work done by firms should be made. Attention should be given particularly to the amount of pure research done in firms, of which, at the moment, there seems to be remarkably little.

PURE RESEARCH

General Electric and the Bell Laboratories are sometimes said to be the only enterprises in the whole country that are engaged in pure research. This is probably an exaggeration. But the detection of pure research is important, for, in the long run, it may pay the investor handsomely.

Pure research is work that is done for its own sake, which advances human knowledge in general, and thereby ultimately opens up endless avenues for practical innovations. Unfortunately, in the past, neither managements nor investors have had a sufficiently long-run point of view to support this type of research, and it has been left principally to the universities and to Government sponsorship. But there are encouraging signs that it will increasingly supported by industry.

OVERCONFIDENT ADVERTISING

In investigating research organizations, the security analyst will generally find great pessimism concerning what the research organization expects to accomplish in the near future. Some research directors have accused their fellow advertising-department managers of greater inventive productivity in their magnificent ads on new developments than the research organization can ever possibly hope to achieve.

Here the enormous pressure put on research organizations to produce quickly profit-making ideas must be appreciated. Research departments are unwilling to make public commitments concerning what they will accomplish, for important discoveries cannot be made exactly to order, although more and more this is becoming the case.

To be committed to produce a miracle a month or even one a year is a large order that any sensible man will avoid. Yet there are some chemical companies that have come close to the first of these objectives.

JOINT RESEARCH

With the research activities of business increasingly moving back, from a sole interest in the immediate problems of new products and how to make the production line more efficient, to a broader interest in the scientific developments that make new products and more efficient production lines possible, business firms are coming increasingly in contact with American universities through joint research. The security analyst will do well to investigate these relationships as indicative of the type and quality of research carried on by the firm.

It is also very important to know something about the morale of a research department. Significant creative work is a delicate flower that blooms only in an atmosphere that is most difficult to create.

GENUINE INTEREST

Genuine interest in the problem at hand, respect for one's fellow research associates, recognition for accomplishment, and the all-important feeling of being a part of a creative organization are vital to an environment in which the creative mind can flourish. To date, universities have been far, far more successful than business in creating such environments. A wise business management will be concerned with these problems and may well seek the aid of social scientists in making studies of the conditions productive of effective research.

CONCEPT OF WORK

Last, what is also to be looked for in a company's research is its concept of such work. Profitable research can take forms other than research, in regard to products and production methods.

The high development of the physical and biological sciences has made possible great and dramatic advances in products and production methods. However, the social sciences of psychology, economics, and sociology, although still pathetically underdeveloped, are reaching a point where, through the work of creative minds in our leading universities, their rapidly advancing fund of knowledge can be of genuine benefit to the firm, in developing a more effective internal organization, and in adjusting itself to ever-changing market conditions outside the firm.

In the past, research in marketing analysis and personnel work has been associated with much unfortunate quackery. To avoid the pitfalls of pseudoscience, alert management in the future will turn increasingly to distinguished university faculties in the social sciences to find out just what can and cannot be accomplished at the moment in these fields. In the future, we will find the employment of academically trained economists, sociologists, and psychologists by firms as accepted as the employment of academically trained chemists, physicists, and biologists is at present.

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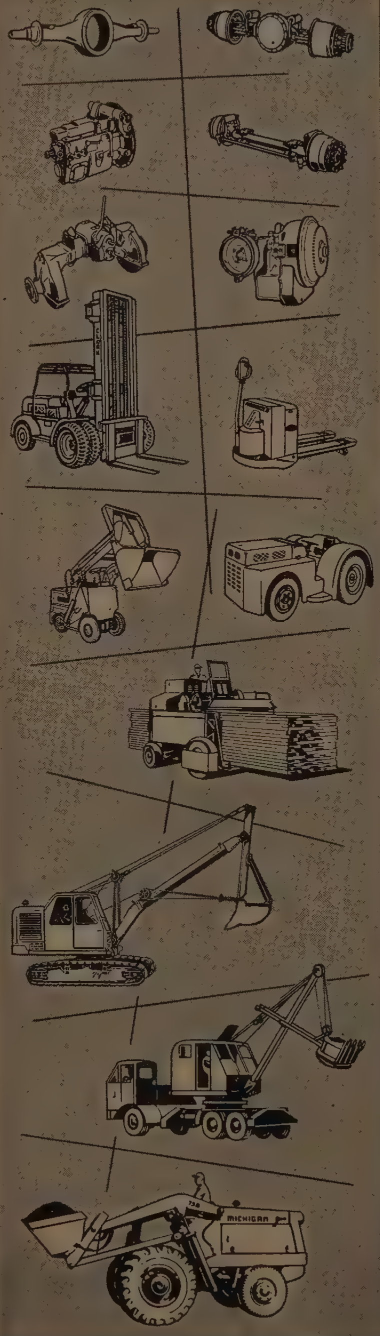

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Furthermore, those final end-products are *better machines* because from engine to tires their power transmission equipment is Clark-engineered and Clark-manufactured.

That to us is fundamentally "good business".

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Economics and Training for Business

FRED PICARD

HOW MUCH AND WHAT TYPE of economics should be included in the business administration program? The answer to this problem is one that has plagued administrators for many years.

In general, there is almost universal agreement that economics should be a basic part of education for business administration. Although there are many variations in the United States, the schools that are training students in business administration do require some economics.

Unfortunately, the common meaning of the subject matter of economics is confusing and misleading. That is, economics as such, is often too inclusive. To the extent that the subject matter of economics is broad, it is difficult to know what phase should be included in the business administration program.

Part of the problem is related to the historical development of economics. There is no general agreement on when economics emerged as a separate area of investigation.

Throughout the Middle Ages, the principles developed were largely a rationalization of the beliefs of the church. As such they were investigations of the clergy. To some extent these conclusions were a part of moral philosophy in a broad sense.

In the eighteenth and nineteenth centuries, economics was a segment of the broad field of philosophy and was closely related to morals and ethics. In a broader sense, however, the philosophers were trying to analyze economic society and formulate general principles and conclusions.

A NATURAL DEVELOPMENT

This was a natural development stemming from the growth of scientific knowledge in the eighteenth and nineteenth century. If there were physical laws of society, were there not economic laws?

The growth of classical or orthodox economics in both the eighteenth and nineteenth centuries was not only a search for universal principles but also a basis for economic policy. To a large extent, the development of economic thought in the nineteenth century created the over-all policy of laissez faire, which in itself was built on a foundation of natural laws.

Thus, Adam Smith was concerned with maximizing production by encouraging specialization, self-interest, and expansion of markets. Ricardo, Malthus, and Say all developed economic conclusions that justified the system of free enterprise.

By the latter part of the nineteenth century, economics was established as a discipline separate and distinct from philosophy. Areas of specialization within economics were developed, and, by 1900, a wide range of courses was included in the category of economics.

In part, this broad concept probably was justified by Alfred Marshall's comprehensive appraisal of economics, for he wrote in 1890 that the subject "is a study of mankind in the ordinary business of life." If one accepts Marshall's concept as a guide, economics encompasses a wide area—the business sector of the economy.

As soon as economics became established as a distinctive field of study, sectors of specialization within the area were developed. To some degree this specialization was coincidental with the beginning of training for business administration by our colleges and universities, a development for the most part of the twentieth century.

In the 1890's though, some educators had recognized the need for the training of people who wanted to enter business as a career. As such education progressed, it became more specialized, and those responsible for business training developed such areas as accounting, advertising, marketing, law, management, finance, insurance, personnel, and many others. As society became more complex, specialization within each field also expanded.

ANOTHER APPROACH

But, in all this development, what has happened to economics in the business administration curriculum? Another way of approaching the same problem is to determine what is meant by economics and what is the significance of business administration. It is clear that business administration subjects have developed as a segment of economics.

Today, however, economics is primarily concerned with problems of the total economy, while business administration concerns itself with the training of persons to operate and manage various sectors of business enterprise. Just as the economist requires some knowledge of business operation to understand the whole system, the business student urgently needs to comprehend the functioning of the total economic system.

The problem is further complicated by the historical and institutional development of courses listed in economics. In some schools subjects are classified as economics, even though they are more nearly business administration. Thus, insurance courses may be listed as economics. The same is true for accounting and other fields.

Examination of the various curricula of our schools of business reveals that some type of over-all economics is required. Although there are many variations, this requirement generally is founded on a course called "principles of economics," plus some additional work in economics — usually elective. Therefore, any attempt to appraise the present practice should be predicated on an analysis of this general arrangement.

To a great extent those responsible for formulating the plan of study for business administration training have left the design of "principles of economics" in the hands of the economist and then assumed that he provided the essential ingredients. In some instances he does, but his task is difficult.

This is brought about by the encyclopedic propensities of textbook authors. Let us face the facts. Many, if not most, of our present textbooks available for use in the elementary courses are really of the survey type.

As such, they include some basic economics, but they often are so comprehensive that they attempt to include insurance, accounting, personal finance, public utilities, corporation finance, agriculture, labor, public finance, banking, and often many others. Thus, most textbooks present a panorama of the specialized areas of economics as well as a wide variety of subjects properly classified as areas of study in business administration.

Some may attack this organization of our basic textbooks, but it should be remembered that most courses in elementary economics are not designed for business students; they are very often the only course in economics that many students in a university take. If we accept this as a continuing practice, then we should recognize the limitations of the situation.

It is not likely that authors are going to plan books to fit a different course, nor is it likely that this type of course is to be altered. The economist faces the task of offering a course that is very comprehensive.

What additional work beyond the elementary course should business students take? In many schools the present practice is to require students to take some elective work in economics.

ECONOMICS IS SPECIALIZED

However, economics is now so specialized that a student may elect a very narrow field of concentration for his requirement. Furthermore, it is possible in some schools for the student to elect a course that does not provide a good comprehension of the total economy.

Coupled with the fact that the elementary course is a survey, it appears, then that the business administration students have not acquired adequate knowledge of our economic system. He has acquired only a worms-eye view of a wormhole.

What should or can be done to improve the situation? The problem is complex. Then, too, it is probable we must accept the present elementary course with little possibility of change.

Certainly we cannot expect business students to expand their courses in economics to encompass all the specialized areas of this discipline. The solution must lie in selecting the most pertinent aspects of economics, insofar as the business training is concerned.

In effect, this means that the economist should carefully cull his science and choose what is most valuable for a business administration career. This is certainly difficult, especially if this selection must be contained in one advanced course. What the economist faces is the problem of choosing the most useful substance of economics and squeezing it into a limited amount of time—perhaps one course.

The problem of what to include in the advanced course has to be evaluated in terms of what we hope to accomplish in this training. Actually we are preparing business executives; we are training people to make important decisions.

These decisions are important to each firm, but they are also important to the over-all economic system. In fact, such actions largely determine the scope and direction of economic activity.

BUSINESS EXECUTIVE'S RESPONSIBILITY

The business executive, in concerning himself with economic policy, must comprehend total policy, and how such activity affects his business. Society charges him with a great responsibility. He helps to determine economic policy and at the same time must understand all its implications. More important, many people look to the business executive as a source of proper economic behavior.

Much of modern economic policy is concerned with stability and the level of output of society. There are other aspects, of course, but, for the last twenty years, these problems have occupied much of the thinking of economists. The development of modern economic policy has been the result of several years of economic thinking; therefore, the substance of such cannot be understood without a background of earlier thinking.

It seems clear then that a program designed for business administration students should require one or more advanced courses encompassing the following: (1) the high lights of the development of economic thought, (2) national income analysis, and (3) fiscal and monetary policy.

Why include the history of economic thought? It is not possible to understand our modern society without realizing the process of evolution, for much of the earlier economic thought was valid only under certain limited circumstances.

If we realize that economic thought is a most comprehensive subject, it should be possible, therefore, to include pertinent ideas of those economists who contributed most to the formulation of economic policies of the Western World. A good starting point would be mercantilism. It would be useful to explain how economic thought supported the strong central state as a means of establishing a framework for the development of trade and commerce. Mercantilism was a product of the times.

After mercantilism the principal ideas of Adam Smith should be presented. These should be related to the decline of the mercantile system and the growth of the industrial revolution. Smith's maxims of how the invisible hand and laissez faire promoted maximum output were partly responsible for the decline of stringent Government regulation.

Both Ricardo and Malthus have contributed much to economic policy. Although both predicted a gloomy future, they were instrumental in focusing attention on natural laws, with which man had to learn to live. But, in a larger sense, they were reaffirming the position of Adam Smith and laissez faire. To them, the natural and immutable laws could not be altered or modified, and therefore collective action was useless.

Certainly J. B. Say has had considerable influence on our economic beliefs, for his theory of markets constituted a cornerstone of economic orthodoxy. Much of modern economic policy is invalid if Say was right.

J. S. Mill and Alfred Marshall made significant contributions to our understanding. Mill was influential in modifying the immutable laws of Smith, Malthus, and Ricardo. To him the inexorable conclusions of Ricardo could be altered to suit the needs and desires of society.

Marshall took the doleful conclusions of some earlier classical writings, added a little J. S. Mill and marginal utility analysis and asserted that man had wisdom and resources at his time to provide a smoothly functioning economic system. Marshall's greatness would have to be related to the pinnacle of success attained in the Victorian era.

Finally, it should be possible to include the thought of Veblen, List, and Carey, because they had some influence on the molding of American economic policies. Throughout the whole analysis of economic thought, emphasis should be placed on the principal contributions to economic policy.

A summary analysis of the development of economic thought leads very conveniently to the general problems of stability and employment. The core of present-day economics is concerned with the determinants of national income.

Thus, while earlier economic policy was concerned with creating laissez faire and examining the problems of value and distribution, modern economic analysis is principally concerned with inflation and the factors that are important in determining the output of the economy. Thus, national income analysis would be helpful in understanding the direction of the economy. This segment of study should be an analysis of the nature, magnitude, trends, and determinants of national income, with some emphasis on the factors determining consumption, investment, and Government outlays.

A thorough understanding of national income is a necessity for the business student. He needs to know what factors incluence the level of economic activity and how such action affects his business and his economic decisions. Furthermore, he should know what economic indicators are valid and reliable, for many of his final judgments will be formulated by interpreting economic data summarized for him by private and Government agencies.

By studying the development of economic thought and national income analysis, the business executive should understand our present concern for unemployment. Much of our present economic policy is concerned with containing inflation and providing full employment. But laissez faire no longer exists as it once did.

Instead, both inflation and employment are determined by private enterprise and Government actions. Thus, fiscal and monetary policy are most influential.

Certainly it is necessary to understand the effects of both Government monetary and fiscal policies. We should ourselves occasionally read the Employment Act of 1946, and realize the responsibility of Congress for maintaining employment.

In summary, a program built on economic thought, national income analysis, and fiscal and monetary policy should provide the business executive with an understanding of the economic system and should enable him to implement public policy. It might be argued that all these subjects are already included in the curriculum.

Of course, this is true to some extent. Some aspects are considered in elementary economics, whereas others are offered in specialized courses. However, that is not the same as their all being contained in one required course. The student needs some perspective on what is most useful to him for his purpose and objective.

* * *

"If management can claim credit for the conditions, it must first discount the cost of bringing them about and deduct the capital charge before it can make a showing of business wisdom."—*Hastings Lyon*

"There are two ways in which capital may be accumulated; it may be saved either in consequence of increased revenue, or of diminished consumption."
—*David Ricardo*

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Annual producing capacity 1,752,000 barrels

1930 After further rebuilding and enlarging the original plant, Marquette started paying dividends in 1910, and in 1923 acquired a second plant at Cape Girardeau, Missouri . . .

Combined capacity . . . . 5,783,000 barrels

1940 Then came the building of distribution centers at Memphis and St. Louis, establishment of a barge line, and in 1940 the acquisition of a plant at Des Moines, Iowa . . .

Combined capacity . . . . 6,783,000 barrels

1947 The producing plants of Hermitage Portland Cement Company and Cumberland Portland Cement Company were purchased, at Nashville and Cowan, Tennessee . . .

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1951 Expanding southward and now going strong, the company built a completely new producing plant at Brandon, Mississippi—the first and only cement plant in that state . . .

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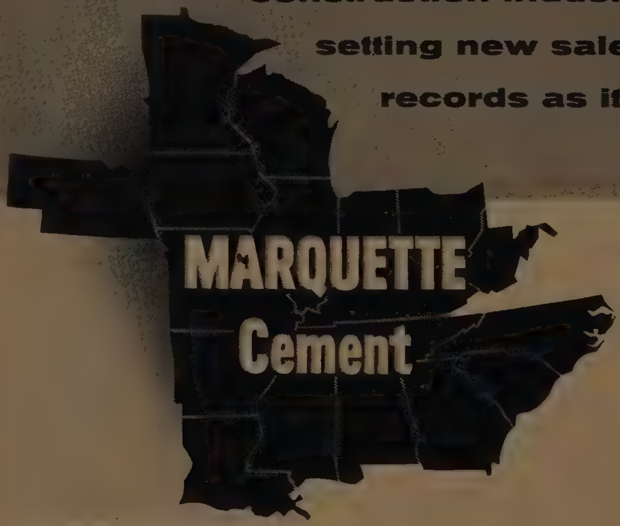

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The Textile Renaissance

H. WILLIAM KNODEL

AN IMPORTANT TURNING POINT appears to be at hand for the textile industry which should assure it of more consistently profitable operations in future years. This change hinges on the final disappearance of excess cotton system spindle capacity in relation to normal demand which has plagued the industry for the past three decades. The intense competition resulting from this excess capacity has meant abnormally low profit margins, except during special periods such as World War II with its heavy military demands, the 1946–48 postwar period of large demand to satisfy the deferred domestic wartime needs as well as heavy exports, and the Korean war period.

Excess cotton system spindle capacity which in 1925 was estimated at 133%, is now down to less than 3%, and in the next year and one half should disappear entirely. This will come about through the combination of a further reduction in the number of spindles in place and the increased need for textiles arising from continued population growth. Even today, in the event of a new national emergency a serious shortage of capacity could immediately develop.

The elimination of excess spindle capacity will place the whole textile industry in a much stronger position. Spinning is the beginning stage of textile manufacture, and therefore the capacity available places a limit on the amount of products made by weavers and knitters and so affects the output of all the succeeding stages of manufacture and distribution of textile products, right down to the retailer.

Cut-throat competition will disappear, and products will be priced to return a reasonable profit on sales as well as on investment. The volatility of the industry in production and prices will be narrowed. Moreover, during succeeding years the industry will take on some of the characteristics of a growth industry—at least to the extent of the population increase.

Textile-machinery manufacturers should likewise benefit substantially. A potential annual demand for about 800,000 new spindles can be estimated over a considerable period in the future, 300,000 of which will be needed to take care of the additional demand for textiles due to population increase, and the remaining 500,000 spindles annually for replacement of over-age spindles now in place.

Such demand compares with an average of about 500,000 new spindles installed per year in the postwar years to date, and with only 267,000 in 1953. Other textile machinery should likewise participate in a rising demand.

Textile activity in the United States over a long period of years has moved in cycles, usually of two years' duration. This pattern is expected to continue in the future.

The present cycle started at a low point in the third quarter 1954, gained momentum in the fourth quarter 1954 and first quarter 1955, and reached its probable peak in the second and third quarters 1955. A moderate declining tendency is expected in the fourth quarter 1955, which should continue through the first and second quarters 1956, with a low to be reached in the third quarter of that year. Thereafter, under normal conditions, a new two-year cycle, 1956 to 1958, should start.

The important factor is that, by the end of 1956, excess

Textile Cycles, 1921 - 1954[a]

Period[b]	Monthly Duration	Average Monthly Per Capita Fiber Consumption, Pounds[c] Gross	Net Exports[d]	Net for U.S.	Population, Millions[e]
Prewar					
8/21-7/24	36	2.55	0.07	2.48	111.3
8/24-7/26	24	2.56	0.08	2.48	115.8
8/26-7/28	24	2.73	0.11	2.62	119.0
8/28-8/30	25	2.52	0.11	2.41	121.8
9/30-7/32	23	1.99	0.08	1.91	124.0
8/32-6/35	35	2.24	0.05	2.19	126.1
7/35-5/38	35	2.61	0.03	2.58	128.6
Postwar					
9/45-7/47	23	3.71	0.28	3.43	142.1
8/47-7/49	24	3.40	0.31	3.09	146.6
8/49-7/52	36	3.61	0.20	3.41	154.4
8/52-7/54	24	3.33	0.18	3.15	165.0

[a] Excludes World War II period.

[b] Low point to low point.

[c] Includes cotton, wool, silk, and synthetic fibers.

[d] Excess of experts over imports of semimanufactured and manufactured textiles.

[e] Average for period.

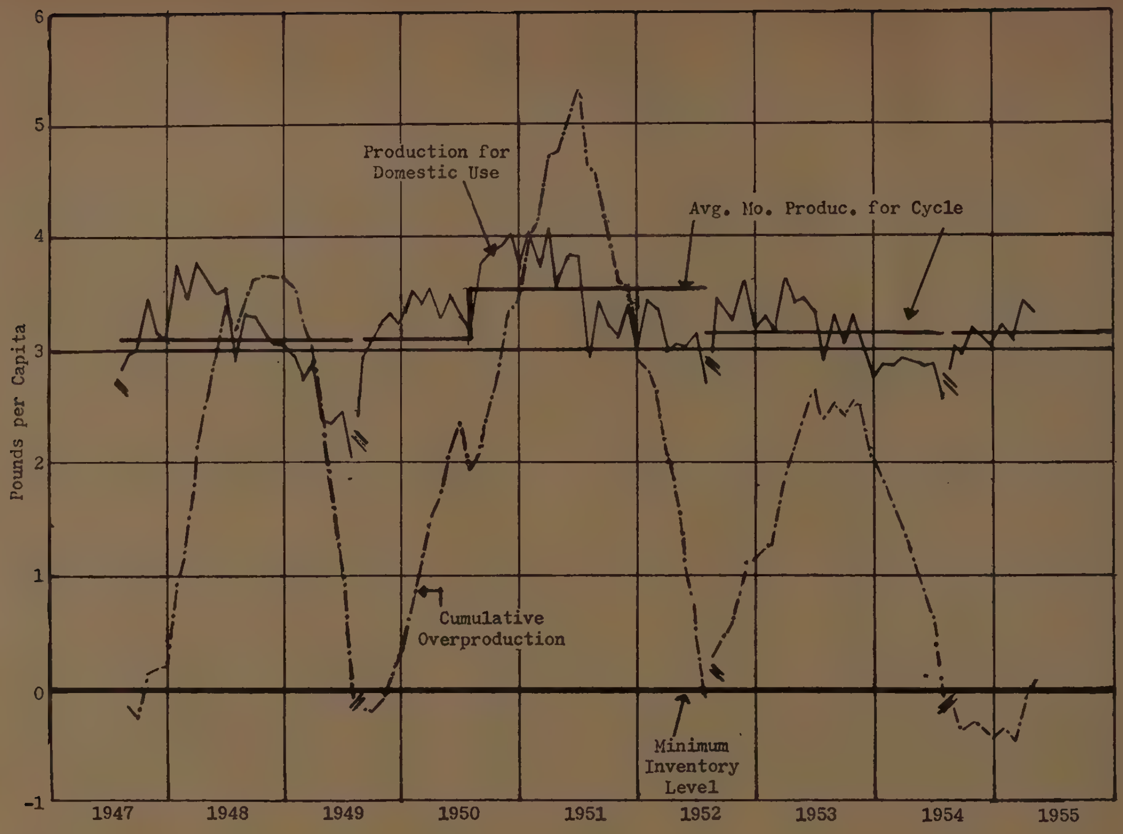


Figure 1. The textile cycle—combined cotton, rayon, wool, synthetics, and silk, pounds per capita. Production for cycle equals consumption for cycle.

Cycle	Avg. Month Consumption, lb
1947-49	3.09
1949-52	
8-49 to 6-50	3.09
7-50 to 7-52	3.55
1952-54	3.15
1954-56	3.15

spinning capacity will have disappeared, as indicated by projections of trends, shown in Figure 2 in population (demand) and in spindles in place (supply). This should mark the genesis of a new era in the industry—a textile renaissance.

THE TEXTILE CYCLE

An article on the textile cycle written by me was published in THE ANALYSTS JOURNAL, third quarter 1951. Its chief purpose was to describe a method of enabling those interested in textiles and textile investments to determine policies of action because of the cyclical gyrations of the industry. This study is now brought up-to-date.

The main characteristics of the textile cycles since 1921 are indicated in the accompanying table. Also, the three most recent cycles are graphically shown by Figure 1. Seven distinct cycles were completed between the years 1921 and 1938.

Mostly the cycles extended over a two-year period, but in some instances lasted approximately three years. Since the end of World War II, four cycles have been completed, three of which ran for two years each, but the cycle encompassing the Korean war lasted three years.

PERIODIC FLUCTUATION IN INVENTORIES

The chief cause of this textile production cycle appears to be the periodic fluctuation in the stocks or inventories of goods held at all stages of production and distribution. No actual figures are available that show just what "normal" would be of any textile in all stages of production from yarn on to unsold retail inventories. Nevertheless, at the low production point in the cycle, these total inventories would be at a minimum level under conditions then existing.

Normal replenishment demand gradually asserts itself. Texile output begins to rise, usually under the stimulus of a price increase in yarns, gray goods, finished goods, and fabricated goods.

This snowball of production increases until the entire range of textile inventory mentioned reaches a level that induces caution. Then individual fabricators and distributors decide in rapid succession that they have plenty of goods in stock. They stop buying or reduce sharply new commitments and textile production falls.

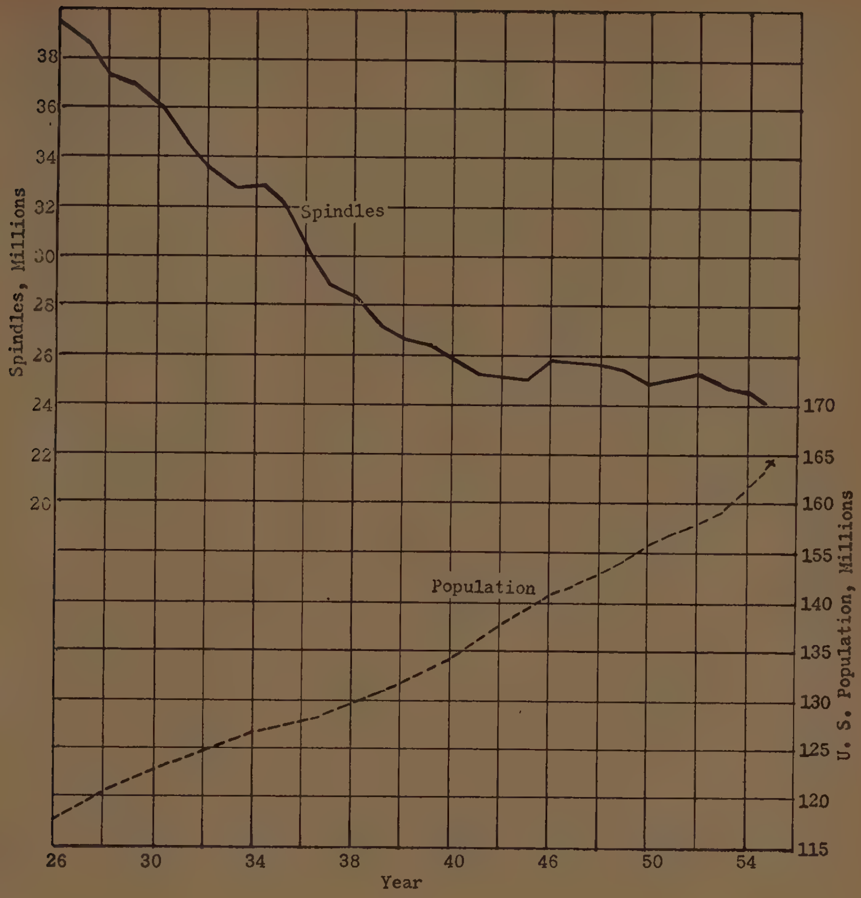


Figure 2. Cotton system spindles in place versus population.

When inventories have again dropped back to a minimum level, buying starts again, and the cycle is repeated. Fundamentally buyer psychology causes the cyclical swings in textiles.

EXTENT OF SWING VARIES WITH BUSINESS

Per-capita consumption of fibers varies for the different cycles. A high rate of general business activity means more demand for industrial textiles, and, likewise, the wages flowing from an active business situation help increase the purchase of textile consumer goods.

An extremely low consumption of 1.91 pounds per capita monthly was recorded in the September 1930 to July 1932 cycle, a period of very depressed general business conditions. A considerably improved level of general business subsequently during the July 1935 to April–May 1938 cycle witnessed 2.58 pounds average monthly per-capita textile consumption.

The average difference between the peak and the low inventory points of the seven pre World War II textile cycles was approximately 1.3 months average consumption of textiles. It is probable that staple goods tend to swing to further inventory excesses than styled goods.

The first postwar cycle, September 1945 to July 1947, indicated abnormally high domestic consumption of 3.43 pounds per capita monthly, reflecting in part accumulated unfilled demand carried over from the war period. Exports also were high at 0.28 pound monthly. Domestic demand in the next cycle, August 1947 to July 1949, simmered down moderately to 3.09 pounds monthly, but exports increased to 0.31 pound.

Then came the three-year cycle encompassing the Korean war, when monthly domestic consumption averaged 3.41 pounds of fiber per capita. In this particular cycle, inventory accumulation at the peak was equal to 1.6 months average consumption, an exceptionally high figure which reflected frenzied buying after the outbreak of the war.

The succeeding cycle from August 1952 to July 1954 indicated a drop in average monthly consumption to 3.15 pounds of fiber per capita monthly, and peak inventory accumulation amounted to only about 0.8 of a month's consumption. This 1952–54 cycle was one of extreme moderation and further reduction of inventories to a lower "normal" level.

If we refer to Figure 1, the course of the three most recent textile cycles is shown, together with data so far in the current cycle. Monthly data are plotted which give the per-capita production of textiles based on the amount of fibers processed at the mills, less the estimated excess of exports over imports.

For each of the cycles, average monthly production per capita was calculated (which over the complete cycle equals the consumption), and, from this monthly average figure, the overproduction or underproduction for each month was estimated. Underproduction would occur when the amount of fiber was less than the monthly average for the cycle, and, conversely, overproduction when it was greater than the monthly average. These monthly overproduction and underproduction figures were then carried on a cumulative basis for each full cycle.

From the behavior of past textile cycles, when the cumulative overproduction reaches approximately three quarters of the average monthly production for the cycle, it constitutes a signal of caution. When cumulative overproduction reaches more than one month's average production, it should be considered a danger signal.

The chart shows the beginning of the current cycle starting with August 1954. It is estimated that average monthly production (which for the full cycle equals consumption) should be the same as the 3.15 pounds per capita attained in the preceding cycle, August 1952 to July 1954. Superimposed on this estimated normal consumption line are the figures of actual monthly per-capita production for domestic use.

DISAPPEARANCE OF EXCESS CAPACITY

Excess capacity in relation to normal demand in the textile spinning division of the industry has been a bearish factor for the past three decades. Indications, however, are that, by the latter part of 1956, this excess should be completely eliminated.

At that time, also, it is expected that textile activity will be in the upswing phase of the cycle. Combined, these two factors should lead to a strong revival in the textile industry.

The decline in the number of cotton system spindles in place over the past three decades has been phenomenal. As against 37,586,000 spindles in place in 1926, there were only 22,208,000 spindles in place at the end of April 1955.

11.5 MILLION SPINDLES INSTALLED

From 1926 to 1954 about 11.5 million new spindles were installed, and 26.5 million spindles were junked or exported. About 6 million of the spindles in place at the present time are over forty years old. In the woolen and worsted division of textiles, the attrition of spindles in place was even more drastic percentage-wise, from 5,200,000 in 1925 to 2,600,000 in 1953, and less today.

Textile World estimated overcapacity of 133% for cotton spindles in 1925, but by 1953 this had shrunk to only 7.8%. This 7.8% excess-capacity figure is on the basis of the highest over-all average activity known, about 82% applied to the theoretical maximum production.

Actually, in 1925 the industry was on a two-shift basis. The evolution from two to three shifts took place in 1939 to 1942, occasioned by the demands of World War II.

Since 1953, there has been a continued decline in spindles, and, in the meantime, population has continued to increase. As a consequence, the overcapacity has shrunk further.

At the beginning of 1953, spindles in place numbered 23,070,000; currently they are down to 22,203,000. Spindles in place in recent years have been declining at the rate of 1.1% annually. Population on the other hand, has been rising 1.7% per year. The impact of these two factors has reduced overcapacity by mid-1953 to only 2.4%.

The year 1955, like 1953, is a year of high cyclical textile activity. The overcapacity applied to a year of low cyclical textile output would, of course, be larger.

MODERATE DIP EXPECTED

A moderate cyclical dip in textile activity is expected during the fourth quarter 1955 and the first half 1956. But, in the second half 1956, a cyclical upswing is anticipated.

On such a premise, and if we assume the continuation of the present rate of decline in spindles and increase in population, it is estimated that the excess capacity will have disappeared entirely by the latter part of 1956. This augurs well for a much-improved basic situation for the textile industry.

Another method of checking excess capacity in the textile industry consists in assuming that, during the first quarter 1951 (peak of the Korean war period), the textile industry operated at 100% of effective capacity. Mill consumption of fiber to be made into yarn on the cotton system during the first quarter 1951 amounted to approximately 1,250 million pounds of cotton (after allowance for 9% waste for short fibers, and so on), and 108 million pound of synthetic staple (after allowance for 4% waste), or a total of 1,358 million pounds.

Because of large military orders, the size of the yarn produced averaged 6.1% heavier than normal, and, if we adjust for this, the 1,358 million pounds would be equivalent to 1,275 million pounds. The index of spindle activity compiled by the Department of Commerce in the first quarter 1951 was 149.3% (based on 80-hour week equals 10%).

In the second quarter 1953 (peak of the 1952–54 cycle) net mill consumption of cotton fiber was 1,060 million pounds, and net synthetic staple 115 million pounds, or a total of 1,175 million pounds. Spindles in place averaged 22,840,000 in this period, down from 23,160,000 average for the first quarter 1951.

The indicated excess capacity in the 1953 peak quarter was 6.5%, on the basis that the 1951 first quarter represented 100% of effective capacity and adjusted for the change in the number of spindles in place. The peak quarterly spindle activity index for 1953 was 138.5%, which is 7.2% below the 1951 peak first quarter.

The peak of the current cycle (August 1954 to July 1956) is estimated to have been reached during the first and second quarters 1955. Net mill consumption (first quarter 1955) was 1,024 million pounds of cotton, and 166 million pounds of synthetic staple, or a total of 1,190 million pounds. Spindles in place averaged 22,400,000, and the quarterly spindle activity index was 140.

Cotton and synthetic staple fiber comprise about 73% of total textile yarns, wool about 7%, synthetic filament yarns 18%, and silk a negligible amount. In recent years, wool has been declining and synthetic filament yarn has about held its own, but cotton and synthetic staple have gained from 71% of total in 1949 to 75% in 1954.

Total fiber consumption (net basis) increased from 33.9 pounds in 1949 to 34.7 pounds in 1954. Both periods represented a low phase of the textile cycle.

THE RENAISSANCE PERIOD

This analysis of the textile situation concludes that the industry is about to enter a renaissance period, probably beginning in the latter part of 1956. Expansion of facilities will be necessary to take care of the increasing needs arising from population growth. Cyclical swings should tend to become narrower and profit margins wider.

The cotton-mill margin average in 1954 of 26.8 cents per pound reflected a depressed as well as intensely competitive condition in the industry in that year. The break-even point for an efficient mill is estimated at about 23.5 cents.

The average annual mill margin in previous years ran 32.2 cents in 1953, 38.6 cents in 1950, and 52.5 cents in the 1947 bonanza year. A fair and equitable mill margin should average around 40 cents, at which level an efficient producer would achieve a profit margin, before Federal income taxes, of around 20% on sales and approximately 10% after these taxes. Such a profit margin, about four times the average achieved by five large textile spinners and weavers in 1954, appears a justifiable and attainable goal.

Important integration steps have been taken during the past two years in the industry, and this trend will probably continue, particularly at the spinning, weaving, and finishing stage. In the past, integration has been both horizontal and vertical, but usually concerned products of the same fiber.

Vertical integration has involved, for the most part, the mill and the converter phase of operations. Recent integration has tended toward a diversification of product, covering the complete fiber range including cotton, wool, and the various synthetics. In the past the relatively large number of separate concerns in the textile industry has intensified the competitive situation, especially during periods of recession in textile activity.

For the textile-machinery manufacturers, a promising period lies ahead. Approximately 300,000 new spindles per year may be required to take care of the additional demand for textiles rising from population gain.

Moreover, a large potential exists in replacing old spindles. It is estimated that there are now about 6,000,000 cotton system spindles in place that are over forty years old.

A ten-year program would mean scrapping of 600,000 per year, and the replacement with perhaps 500,000 new more efficient spindles. Together this presents a potential demand for some 600,000 spindles per year, and compares with an average of around 500,000 new spindles per year installed so far in the postwar period. Other textile machinery should likewise benefit from a rising demand.

Public Service Electric and Gas Company
NEWARK, N. J

QUARTERLY DIVIDENDS

Dividends of $1.02 a share on the 4.08% Cumulative Preferred Stock, $1.04½ a share on the 4.18% Cumulative Preferred Stock, 35 cents a share on the $1.40 Dividend Preference Common Stock, and 40 cents a share on the Common Stock, have been declared for the quarter ending September 30, 1955, all payable on or before September 30, 1955 to holders of record at the close of business on August 31, 1955.

F. MILTON LUDLOW
Secretary

NJ PUBLIC SERVICE
CROSSROADS OF THE EAST

RICHFIELD
dividend notice

The Board of Directors, at a meeting held July 11, 1955, declared a regular quarterly dividend of 75 cents per share on stock of this Corporation for the third quarter of the calendar year 1955, payable September 15, 1955, to stockholders of record at the close of business August 15, 1955.

Cleve B. Bonner, *Secretary*

RICHFIELD
Oil Corporation

Executive Offices: 555 South Flower Street, Los Angeles 17, California

SMOKING PLEASURE . . . PAST AND PRESENT

Ambassadors of smoking pleasure

Sixteenth-century sailormen were realists. They smoked tobacco because they liked it. And they laughed at the antics of tobacco faddists—the elegant dandies of Londontown who polished their smoking manners under the watchful eye of "tobacco tutors" in order to keep abreast of changing fashions in the "art of smoking."

For smoking was a pleasure, pure and simple, to sailormen, and they shared their enjoyment with all they met in distant ports. They were tobacco's first ambassadors, winning friends the same way P. Lorillard Company has ever since it was founded in 1760—through the good fellowship and restful relaxation that only *smoking pleasure* can provide.

The making of fine tobacco products has been our business for nearly 200 years, and our single-minded devotion to smoking pleasure has brought us new friends every year. OLD GOLDS—regular, king size and filter kings—are today more popular than ever. And KENT, the cigarette with the amazing *MICRONITE* filter, continues as a leader in the high filtration field.

There's only one reason for this popularity, for the continuing loyalty of Lorillard customers to *every* Lorillard product . . . and for the confidence of Lorillard stockholders in the future of their company. It's the result of two centuries of Lorillard leadership in *smoking pleasure.*

P. Lorillard Company

AMERICA'S OLDEST TOBACCO MERCHANTS · ESTABLISHED 1760

Leading Products of
P. LORILLARD COMPANY

Cigarettes

OLD GOLD · *Regular, King Size and Filter Kings*
KENT · *Regular and King Size*
EMBASSY · *King Size*
MURAD
HELMAR

Smoking Tobaccos

BRIGGS
UNION LEADER
FRIENDS
INDIA HOUSE

Cigars

MURIEL
HEADLINE
VAN BIBBER
BETWEEN THE ACTS

Chewing Tobaccos

BEECH-NUT
BAGPIPE
HAVANA BLOSSOM

"America's First Family of Cigarettes"

Valuing the Dow Jones Industrial Average

PAUL A. MURPHY

FOR OVER A YEAR the stock market has risen vigorously against a declining or, at best, stable business picture. Even the election, resulting in the much feared Democratic control of Congress, has merely accelerated the upward trend in quotations. Is it possible to rationalize the current level of stock prices, or does the market appear vulnerable to a deep, sharp drop such as has occurred in the past?

A fair value of the Dow Jones industrial average would seem to be available if we could project a conservative but realistic level of earning power and if this earning power could then be valued properly.

BUSINESS WILL RISE GRADUALLY

Earnings on the Dow Jones industrials in 1954 have apparently stabilized above the 1953 level of $27.23. Elimination of the excess profits tax has more than offset the decline in earnings due to lower business activity. Many well-known economists believe that business will not decline further, but instead will rise gradually from this level as consumer demand increases and inventory liquidation subsides.

If business is to rise from the spring–summer level of 1954, then the $27 being reported represents recessionary earning power. Since these earnings are further buttressed by emergency amortization as well as by the underlying growth in population and productivity, there is good reason to expect earnings to advance from present levels over the next several years. Undoubtedly the most important development market-wise in 1954 was the modest decline in general business and the ability of the companies comprising the Dow Jones industrials to maintain earnings effectively.

A conservative but realistic level of earning power for the Dow Jones industrial average would appear to be not less than $27. The valuation of this earning power should be derived from the basic money rate and a reasonable discount factor.

Currently the long-term treasury yield is under 2.75%. Turned around, $1 of annual income is valued at more than $35. Representing the cornerstone of our highest-grade debt, this issue would seem to be the basic yardstick for stock valuation.

Valuation of equity earnings in relation to highest-quality interest income depends, in part, on the type of investor. Where liquidity is all important, the normal fluctuation in common-stock prices is intolerable. For long-term investors not concerned with liquidity, the greatest risk is deterioration in earning power. Over the past fifty years, the mortality has been extremely low in the Dow Jones industrial companies. Aside from cyclical declines, which have been discounted in our estimate of earnings, the trend of profits has been upward. In addition to growth in earnings, industrial stocks provide some hedge against inflation. These are factors that should be important in future years and are not present in Government bonds.

The serious inflations that have taken place abroad, as well as the 50% decline in the purchasing power of fixed income during the past fifteen years here at home, are well known. Nor is the trend likely to change when weight is given to budgetary deficits, housing loans, full-employment philosophy, low interest rates, wage increases outrunning improvement in productivity due to strong national unions, and similar effects.

If Dow Jones earnings were assumed to be worth 60% of the basic interest rate, then dividend income would approximate the interest income, and some 40% of earnings could be ploughed back to provide future growth and offset inflation. In an economy likely to experience both growth and inflation, a higher valuation of noncyclical earnings is likely to become accepted.

Applying a valuation factor of 60% to the treasury income value of $35 would place a figure of over $21 on each $1 of Dow Jones industrial average earning power. On this basis, the present (and conservative future projection) Dow Jones industrial earning power of $27 would be worth over 550.

If the Republicans have the courage to allow interest rates to reflect the free market price, a rate of at least 3½% would seem necessary to offset average annual inflation and still show a 2½% yield.

Since a 3½% rate values $1 of income at $28.50, the corresponding value for Dow Jones industrial earnings using a 60% factor would be slightly over $17. Under this assumption, the $27 would be worth somewhat over 450 for the Dow Jones industrial average.

A TEST CHECK

As a test check against this theory, it might be interesting to examine briefly three components of the Dow Jones industrial average.

1. Du Pont—a growth issue.
2. General Motors—a general business issue.
3. U. S. Steel—a cyclical issue.

Du Pont should soon have capacity 20% above the end of 1952. If sales expand to a level 10% above early 1953 output, which seems reasonable during the next twelve months, du Pont operating profits should reach a rate of $6 per share, assuming a profit margin only slightly above the recent low point.

Considering du Pont's fine record, excellent prospects, superior financial condition, and earnings on invested capital, a price-earnings multiple of 25 would not seem out of line. On this basis, a value of 150 is indicated for chemical earnings alone. If General Motors is assumed to be worth 125, as indicated below, then du Pont should be worth over 200.

General Motors is generally regarded as having top-flight management. Executive development is so productive that the company has supplied numerous officials to other organizations without loss of effectiveness. Like du Pont, it is one of the few companies that has not succumbed to the stock-option racket (both companies have the much more logical profit-sharing plan, instead).

To those who regard General Motors as a cyclical enterprise with very little growth, it may come as a surprise to learn that the company's sales growth since 1937 has exceeded du Pont's. The reason for this astonishing gain is not the increase in unit car sales—although the latter have more or less paralleled general business—but rather the 340% increase in sales per unit.

Inflation has played a part but more gadgets, fancier models, and new products have been important. Nor is the end in sight. Automatic transmissions, power steering and brakes, air conditioning, replacement parts, sport cars, earth moving, jet engines, and so on, should add considerably more to sales than the growth in car production.

With an earnings outlook of perhaps $8 per share in the current recessionary year and the prospect of material improvement over the next several years (the capital program alone should add $1 per share for each of the next two years, based on past standards), the stock at 11 times current earnings certainly carries a modest appraisal of General Motor's brilliant past and promising future.

United States Steel probably typifies a cyclical business which has been out of favor until recently, for the very good reason that its record was poor and the business outlook uncertain. If business has stabilized and gradual improvement is in prospect, then the ingot operating averaging about 70% has been too low. To be in line with general business activity a level of 80% or better is indicated. At such a rate of activity, U. S. Steel should earn, under normal accounting, at least $10 per share. Since this earning power relates to business activity only slightly above the recent low point of the recession, a price-earnings multiple of 10 seems low. On this basis the stock should be worth at least 100. In terms of replacement cost of over $250, this would be the equivalent of stating that ingots now selling for $45 might well be valued at $65 to $70.

To the extent that du Pont, General Motors, and U. S. Steel typify the Dow Jones industrial average, it would seem that a higher valuation than currently prevails is warranted. This hypothesis might well cover other issues which analysts are certain to uncover during the year.

BOSTON EDISON COMPANY

Dividend No. 265

A quarterly dividend of 70¢ per share has been declared, payable August 1, 1955, to stockholders of record at the close of business on July 8, 1955.

Checks will be mailed from Old Colony Trust Company, Boston.

ALBERT C. McMENIMEN, Treas.

Boston, June 27, 1955.

INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 147 of one dollar and seventy-five cents ($1.75) per share on the preferred stock payable June 1, 1955, to stockholders of record at the close of business on May 5, 1955.

GERARD J. EGER, Secretary

AMPHENOL

AMERICAN PHENOLIC CORPORATION

At a meeting of the Board of Directors of American Phenolic Corporation held today a dividend of twelve and one-half cents per share was declared, payable July 29, 1955, to the shareholders of record at the close of business July 15, 1955. The transfer books will not be closed.

Dated at Chicago June 21, 1955.

FRED G. PACE
Secretary

An increased regular quarterly dividend—from 25c per share to 30c per share—has been declared by Daystrom, Inc. Checks will be mailed August 15th to shareholders of record July 27th.

DAYSTROM, INC.
ELIZABETH, N. J.

Electronics
Furniture
Printing Equipment

GOODYEAR

DIVIDEND NOTICE

The Board of Directors today declared the following dividend:

50 cents per share on the Common Stock, payable September 1, 1955 to stockholders of record at the close of business July 20, 1955.

The Goodyear Tire & Rubber Co.
By Arden E. Firestone, *Secretary*
Akron, Ohio, June 27, 1955

THE GREATEST NAME IN RUBBER

NATIONAL DISTILLERS PRODUCTS CORPORATION

PRODUCT OF NATIONAL DISTILLERS

DIVIDEND NOTICE

The Board of Directors has declared a quarterly dividend of 25c per share on the outstanding Common Stock, payable on September 1, 1955, to stockholders of record on August 11, 1955. The transfer books will not close.

PAUL C. JAMESON
July 28, 1955 *Treasurer*

"If You Are So Smart, Why Are You Not Rich?"

DANIEL R. GOODWIN

THE TITLE TO THE ARTICLE by Philip K. Anthony in the February issue of THE ANALYSTS JOURNAL suggests several interesting lines of inquiry. This "rude though pertinent question" certainly implies that a considerable number of those of us who set ourselves up as capable of advising others on matters of investment have not been able to do much about feathering our own nests.

If there are any reliable statistics to prove or disprove the charge I would not know where too look for them. But we all have seen many cases of men in the employ of financial institutions who have demonstrated their ability to make a thorough careful analysis of any given business and offer sound advice to their clients, yet who never seem to be able to build up their own economic resources. On the other hand we repeatedly meet men who are quite unable or unwilling to make a thorough technical examination of a proposed investment and yet handle their personal portfolios in such a way that they prosper nicely and garner in ever increasing amounts of this world's goods.

Similarly we find "traders" who can handle with great ability the accounts of those who employ them but do not do much for themselves.

The natural suggestion is that it takes a bit of capital to start on. But there are so many successful investors who started with only their own savings that that answer does not ring true. And if capital to start with is the great essential key to success, what about the vast multitude who start off with inherited capital and lose it?

SUBJECTIVE ATTITUDE

The question is too complicated to try to cover it all now. That it depends in large part on the subjective attitude of the "analyst-investor" toward the management of his personal affairs will not be questioned. Can he look at his personal business problems impersonally as he looks at a company he is analyzing? Can he then prescribe and work out for himself such rules as he would recommend for a business concern he has examined?

It is just one phase of this management problem to which one should call attention, a phase which most men naturally hate to think of in connection with their own affairs. The analyst, in his enthusiasm for his ability to select companies which prosper famously in the economic atmosphere of the last half generation, forgets to allow for the fact that he "could be wrong".

ALLOW FOR ERRORS

Looking at it this way — the credit manager of any concern which in the regular course of its business extends credit to its customers allows for some errors and sets up a reserve to care for them. When the analyst becomes an individual investor with a diversified portfolio he is in reality extending credit. But will he follow the credit manager's rule and set up a reserve for the errors he will probably make? How many Financial Advisors, be they just plain salesmen or truly "Financial Analysts," will say to themselves: "In these risks that I am taking there are probably some errors. I will lay aside a reserve out of income to take care of them"?

MUST SET UP RESERVES

A careful analyst would be shocked to find that a company he was examining was providing no reserves out of income for credit losses. If he recognizes provision of such reserves as good and necessary business for a corporation seeking public credit, why should he not apply the same rule to his own personal investment account. Both men in this business and individual investors in general have observed that the thing that has most often prevented them from building healthy, growing portfolios is the policy, followed especially in good times, of taking every item which may possibly be labeled income or profit and declaring it to be "spendable income" without setting up any of the reserves which they would expect a careful corporation executive to set up.

So one is asked what sort of formula can be used in setting up such a reserve? After forty odd years of experience in the investment business devoted mostly to handling individual accounts experience suggests a formula which has proven, for a number of clients, simple, easy to follow and quite effective. Credit men are likely to want a reserve of ¼% to ½% of their average accounts receivable in any one year. That is too complicated for the ordinary individual investor to figure. But if one assumes that his average cash yield from dividends and interest over a period of years is likely to be about 5%, then ½% of his capital extended as credit to the companies in which he has invested would be just one tenth of his cash receipts—it is very easy to figure.

CALCULATING RESERVES

Calculating reserves as a proportion of cash return automatically makes certain very advisable adjustments. If one has made certain very safe, conservative, low yield investments the adjustment for the reserve against such investments will be relatively small from a cash standpoint and will also be rightfully small as a percentage of the capital investment. In another case, an investor extends credit by buying the stock of a company which pays out a very small portion of its earnings in cash and "plows back" the rest. The reserve he lays aside on his own books in this case is very small. The company has done it for him quite painlessly, and, under present laws, "taxlessly." If the company changes its policy and pays out a larger part of its earnings this formula will properly call on him for a larger reserve.

To get back to the original question, why can a man be a smart investment analyst and yet not make a great deal of personal profit out of his training? The answer in most cases is that he is not personally following the rules which he would expect to find applied in any company whose management he would rate as excellent.

Frequently one puts a heap of reliance on security analysis but when it comes to building up a good sized capital account it takes more than analysis. Part of the extra needed is reserves, out of income, for those inevitable losses due to errors in judgment.

The way the market is trending now such precautions seem entirely unnecessary. Most analysts feel like good financial advisors! The real problem is — have we been building up our accounts faster than the increased standards of living have called for? (The dollar and cents value, figured on daily quotations is a very unreliable yardstick.) Everyone around us is rushing ahead! Are we getting out in front or just being swept along with the rising tide? If the tide ever begins to ebb will we be able to hold our gains? Certainly careful attention to one's personal business methods is just as important as detailed analysis of investments.

If the analyst wants to get rich, no matter how little or how much he has for a start, one thing is certain, he must practice the same sort of controls and "plow backs" in his own business that he would approve in a company he is analyzing. A 10% reserve will not much more than keep him even over a full cycle.

To make a success of handling one's own portfolio requires at least three types of abilities: (1) Ability to analyze an industry and any specific company in that industry; (2) ability to analyze the general economic trends; and (3) ability to analyze and handle one's affairs in a sound impersonal manner. The first two can be purchased, but without the third the first two are useless. And want of such discernments is why so many of us are not rich!

* * *

> "The security analyst may be a keen student and finder of facts, a perceptive reporter, a lucid writer, and have other qualities, but the art of successful investing requires more than this."—*Philip K. Anthony*

MINNEAPOLIS GAS COMPANY

739 Marquette Avenue
Minneapolis 2, Minnesota

Common Stock Dividend

The Board of Directors of Minneapolis Gas Company, at a meeting held on July 14, 1955, declared a dividend of 31¼ cents per share payable in cash on August 10, 1955, to common stockholders of record as of the close of business July 26, 1955.

H. K. WRENCH, *President*

AIR REDUCTION
Company Incorporated

AIRCO 153rd CONSECUTIVE
COMMON STOCK DIVIDEND

The Board of Directors has declared a regular quarterly dividend of 35¢ per share on the Common Stock of the Company, payable on September 3, 1955 to holders of record on August 18, 1955, and the fifteenth regular quarterly dividend of $1.125 per share on the 4.50% Cumulative Preferred Stock, 1951 Series, of the Company, payable on September 3, 1955 to holders of record on August 18, 1955.

July 28, 1955.

T. S. O'BRIEN, *Secretary*

SOCONY MOBIL
OIL COMPANY, INC.
Dividend No. 178

The Board of Directors on July 26, 1955, declared a quarterly dividend of 50¢ per share on the outstanding capital stock of this Company, payable September 10, 1955, to stockholders of record at the close of business August 5, 1955.

W. D. BICKHAM, *Secretary*

DIVIDEND NUMBER 45

Interlake Iron Corporation has declared a dividend of 30 cents per share on its common stock payable September 30, 1955, to stockholders of record at the close of business September 15, 1955.

J. P. Fagan
Exec. Vice Pres. & Treas.

INTERLAKE IRON CORPORATION
CLEVELAND, OHIO
Blast furnace plants in Chicago, Duluth, Erie and Toledo

THE **W. L. Maxson**
CORPORATION
460 West 34th St., N.Y. 1, N.Y.
MAXSON

Notice of
QUARTERLY CASH DIVIDEND
10¢ a share

AND A
STOCK DIVIDEND of 2%
(at the rate of 2 shares for each 100 shares held)

Payable September 1, 1955
Record date, August 18, 1955

July 28 1955

The American Metal Company, Limited

COMMON STOCK
Dividend No. 119

The Board of Directors has declared a dividend of fifty cents (50¢) per share on the Common Stock payable September 1, 1955 to stockholders of record at the close of business on August 19, 1955.

H. VOGELSTEIN,
Vice President and Treasurer

Constant Safety versus Sound Profitability

VAHE H. KENADJIAN

I. BONDS AND STOCKS IN INVESTMENT PORTFOLIOS

TRADITIONALLY it has been bonds of high quality that have been considered the proper medium of investment for responsible institutional investors such as trust funds, savings banks, and insurance companies. Recently, and especially within the last few decades, this has not remained as it was in the past.

Common stocks have been gradually seen to find their way into the portfolios of the most respectable institutional investors. By now it is apparent that the inclusion of at least a small proportion of stocks in the portfolios of even the most highly conservative investors is acceptable by law and practice (even though this portion may indeed be negligibly small in certain instances).

From a point of view of investment principles this recent trend toward investment in stocks as well as bonds has been regarded as reputable inasmuch as the stocks selected for conservative investment have been of such quality as to be indisputably safe and sound. However, there has yet been no fully developed theory of investment that would provide a basis for the development of criteria of measurable quantities to determine what portions of institutional investments should consist of bonds and stocks, respectively. Even though, on a qualitative basis, common stocks have been found to be suitable for institutional investors of even the most conservative type, there is as yet no quantitative basis concerning how far one could go in this matter within the bounds of the objectives of such institutions, or yet concerning how far one should go in increasing the stock component in the portfolios of such institutions.

BASIS FOR A CRITERION

A quantitative criterion for the determination of the best possible combination of bonds and stocks in any portfolio would naturally have to rest on an investment theory of what can be accomplished in the field of investment and at what risk. But such a criterion would also have to depend, for its effectiveness, on the objectives of the funds that would adopt it as a basis for a course of action in the management of investments.

However, inasmuch as the objectives of all funds consist in varying degrees of safety and profitability, the criterion in question for bond and stock proportions in a portfolio would take account of possibilities in investments, which consist of different weights of safety and profitability, at the same time as it is developed to suit the objectives of the different funds. In other words, the basic factors in any investment theory, namely, safety and profitability, are also the basic factors in the objectives of investment management, and therefore the criterion to be developed could not but be one that would be suitable for the satisfaction of investment objectives, if it rested on investment possibilities.

SAFETY AND PROFITABILITY

The concepts "safe" and "profitable" are rather elusive in the field of investment. By and large, however, safety refers to the preservation of capital (in real or monetary terms or both), whereas profitability refers to a relatively high degree of comparative rate of return. It may be true that either safety or profitability may be obtained at the expense of the other (such that, for instance, one may have to choose between eating well or sleeping well — so to speak), but all this depends exactly on what we mean by our terms, since, after all, is it not possible that a greater rate of return may compensate for a loss on capital or the risk thereof?

Therefore, in order to avoid endless argumentations on semantics, we can use the concept of *constant safety* instead of simply safety *vis a vis* profitability in investment problems. Then it may be possible to say that it is constant safety that is, in general, incompatible with profitability (if, of course, by profitability we mean a greater comparative return that can be obtained within the bounds of investments of constant safety—a seemingly circular reasoning, but one that is definitional and hence useful). In this case constant safety would refer to the preservation of capital *through* time, while profitability would still refer to a comparative rate of return.

Furthermore we can also use the concept of *sound profitability* if we want to refer to profitability of such nature that does not involve, short of a major calamity, risk of *ultimate* capital preservation (even if it may involve a risk of loss on capital at temporary intervals). As examples we may take high-quality bonds as investment media providing us with more or less constant safety (at least in monetary terms), whereas we may take stocks of fluctuating prices as investment media providing us with possibilities of sound profitability, provided that sooner or later the price we pay for them can be obtainable should we decide to sell.

METHODS AND ASSUMPTIONS

Needless to say every investment management deems it important (and properly so) to have a certain degree of constant safety. Yet profitability is practically just as important for investment funds.

Hence it is important to know about the character of profitability that common stocks may offer. In this connection there have been many studies made to determine the exact merits of common stocks.

The past history of the behavior of common stocks grouped in different groupings has been carefully scrutinized; underlying reasons have been studied from trends of earnings and dividends; numerous correlations between the behavior of stocks and their earnings and dividends, as well as various economic factors, have been explored and studied. In fact a huge pile of material has been accumulated in the field of common-stock studies, and any one who cares to make any forecasts about the future of common stocks, on the assumption that the future will be a projection of the past, can have access to a wealth of material to choose from as his basis, according to his taste and predilections.

II. THE MERITS OF COMMON STOCKS

However, forecasting the future elaborately (on the basis of the past or otherwise) may not, after all, be necessary at all, in order to determine the merits of common stocks. We may know nothing at all about the compiled statistics, and, admittedly in complete ignorance of what the future may exactly have in store for us, we may yet be able to evaluate the merits of common stocks in general.

YIELD AND PROFITABILITY

As a point of departure, let us say that we become attracted to common stocks owing to their greater yield than that of bonds. And let us say that we would like to examine what could possibly be the future course of prices of a selected group of high-quality common stocks representative of a substantial cross section of the economy.

Furthermore, let us say that all that we assume about the future course of prices is that they will fluctuate. From this limited viewpoint we can deduce that the fluctuations will have a trend, and that the trend will be either downward or on a level or else upward (there exists no other possibilities!).

Now, then, we can start considering the implications of these possibilities and what meaning they can contain. If the trend be downward (that is, continuously, to be sure), then this could signify either one of two things: (1) There must have been a downward trend in the earning power of capital in the economy as a whole (since our list of stocks would be so chosen as to be representative of a substantial cross section of the economy), because earning power is *the* basic factor in the long-run determination of stock prices in general. Or (2) there must have been a gradual reduction in the price-earnings ratios. In the event that there comes about a continuous downward trend in the earning power of (real) invested capital, the economy as a whole would be on its way to deterioration, and no type of investment at all could for long be of much value.

It may be true that, for a while, the productivity of the economy might be just enough to cover the return on debt. But eventually a basic structural change in the earning power of capital would necessarily lead to an absence of new investment, which would ultimately lead to a gradual decay of the economy. At this point it would not matter in what technical form one had made in investment: No one would get anything, and no security would have any value.

Therefore, so far as we are concerned with the value of our investments, it is best to stop considering this possibility under which preservation of capital could have no meaning. Whereas if there comes about a gradual reduction in the price-earnings ratios, and if that is all that causes a continuous decline in the stock prices, then any loss of capital that the investor may suffer, as a consequence, can eventually be made up with higher and higher returns, if one keeps on buying stocks at regular intervals.

On the other hand, if the trend of stock prices be either on a level or yet upward (which is the most likely, as we will see), then it means that ultimately the money invested in stocks can be recovered if only stocks are bought at periodic intervals (by the dollar-averaging method), such that one averages out roughly on the trend-line prices. (In passing it can be noted that, if we follow the method of dollar averaging, our portfolio will always cost us less than what it would have cost at average prices, since when we buy a certain sum of money's worth at regular intervals, we will be buying more at lower prices than at higher prices as a matter of procedure).

We can conclude therefore that the profitability that common stocks offer is a "sound profitability" in the sense that it is of such nature that does not involve risk of ultimate capital preservation short of a catastrophic deterioration of the economy. Yet this is not all that there is to be said about the character of the profitability of common stocks. There are two further points to be taken into account, after which we may try to establish a criterion that should be used for the determination of the relative proportions of bonds and common stocks in an institutional investment portfolio.

THE ELEMENT OF GROWTH

The profitability of common stocks does not lie merely in higher yields which one can obtain in the form of dividends as compared to interest on bonds. The earnings of a corporation are practically never (excluding unusual circumstances) paid out in full in the form of dividends.

Retained earnings are added to the original capital, and thus normally increase the earning power of a share of common stock (unless they are wasted inefficiently). Hence we can see that the mathematics of the economic process points to results that would tend to gradually increase the trend of earnings of a share of common stock, in the form of the increase of the interest of a savings account of compound interest (albeit much more irregularly), since the capital represented by the stock increases owing to retained earnings, proportionately (roughly) much as the increase of a savings account.

But, one can argue, earnings do not by any means depend solely on the amount of invested capital and the earned surplus brought about by the retention of a part of earnings. However, it so happens that, even though earnings depend on not only one factor but rather a variety of them, the trend of earnings can be taken to be governed by the above indicated mathematics of the economic process all the same.

It is true that earnings depend on such factors as population, technological efficiency, competitive conditions in the market, and possibly a number of other factors (such as general or particular monetary influence, fiscal policies of the Government), as well as the cyclical fluctuations in business activity. But we should not lose sight of our problem as being one that is concerned with only the *trend* of earnings, which should remind us that we need not pay undue attention to such factors as the ones just mentioned. An economy is always likely to go through adjustments and readjustments, which will have the effect of ironing out cyclical or sporadic and even somewhat longer-lasting institutional influences producing deviations from what one might call "normal" earnings on a certain amount of invested (real) capital.

IMPORTANT FACTOR

There is, nonetheless, a factor of considerable importance in the determination of earnings, which we have not yet taken into account: the capital structure of corporations, that is, their debt-equity ratios. Let us take a simple example of a company with a 50–50 debt-equity ratio, that is, a company of which the capital structure consists of 50% bonds and 50% common stock.

Let us assume that this company earns 10% on total invested capital, and that it pays out 70% of earnings per share as dividends, and that it pays 4% on its bonds outstanding. At the end of a full year, then, we would find that $200 of the invested capital has earned $20, out of which the interest charge of $4 (on $100 of bonds of the $200 invested capital) gets paid out to the bondholders, and there is left over (if taxes are left out of the picture to make the example simple) a sum of $16 of earnings for the common-stock holders, out of which $11.20 (70% of $16) gets paid out as dividends, and there is an earned surplus of $4.80 left over.

To the extent that the retained earnings will add to the earning power of the company, the earnings of the next year will be (still assuming the 10% rate) $20.48 (on $204.80 of invested capital), and hence the earnings per share will be greater than what they were in the previous year. But this increase will be less and less as the years advance, because of the fact that the debt-equity ratio keeps on decreasing (since the bond component of the capital structure remains unaltered while the equity component increases).

EARNINGS ARE RETARDED

Needless to say, the larger the part of a certain invested capital earning 10% that is financed by bonds on which only 4% has to be paid, the greater would be the profits left over for the common stock. Therefore, we see that this process by which the debt-equity ratio changes seems to act as a built-in mechanism, whereby the increasing increase of earnings is retarded—even if not eliminated.

However, as corporations grow in stature, their position in the economy is strengthened, and it becomes easier for them to finance themselves by means of borrowing (on a long-term basis or otherwise), in lieu of depending on equity financing as well as borrowing. Consequently they can alter their capital structure to suit their needs more freely than they could at the beginning. And in the event that they take advantage of this possibility of increasing their debt-equity ratios (as they have done in the past), there is a complementary reason why the trend of earnings would be fore accentuated (and not retarded at all, in general) in its increasing rise.

Last, of course, in this connection, we must also consider the effects of taxes on the earnings picture. Taxes naturally have the effect of reducing available earnings per share of common stock. But it can safely be assumed that they will never be so high as to prevent a "normal" return to capital, lest they cause inconceivably serious disorders in the functioning of the economy, for capital would always struggle to maintain a return for its uses.

Therefore, as long as we can rely on a long-run "normal" return to capital, we can also be confident that the long-run trend of earnings of existing corporations will keep on increasing and, most likely (barring effects of unusual circumstances), increasing at an increasing rate, owing to the effect of retained earnings—even if for no other reason.

Moreover, in passing, we can mention that, if we assume that the price-earnings ratios of common stocks will be more or less the product of a constant multiplier (applied to earnings) over time, it can be said that the most likely trend for stock prices will be an upward trend (exponentially). It should also be worth noting that, if series of stock prices are plotted by the use of an index, which does not give weight to common-stock dividends, the upward rise of the market value of an actual portfolio will be partly camouflaged (since prices of stocks do not generally decline proportionately as more stock is issued in the form of stock dividends). Similarly a trend of earnings plotted on a per-share basis will not fully reflect the true earnings trend for presently existing shares of a company, since part of the earnings will be assigned to additional shares, which nevertheless will have been received by the investor owning the previous shares (if, of course, he has kept his old shares intact and received the stock dividends on the old shares).

OPPORTUNITIES IN THE MARKET

In our consideration of the merits of common stocks, we have so far taken into account only their profitability due to their inherent nature. We have considered the market behavior of stock prices only in relation to the problem of the soundness of the profitability that stocks offer.

In that connection we have seen that it is necessary to adopt a defensive measure (dollar averaging) in order to safeguard the principal of investments in stocks. Thus, so far, we have looked on market fluctuations of common stocks as a phenomenon to be guarded against. But it is very important to remember that, where there are fluctuations of prices, there are possibilities of profits as well as risks of losses.

Hence, for those who would make the best of investment possibilities, there can be opportunities for profitability in common stocks which exist as a result of their fluctuating market behavior. What is more, such possibilities of profitability that are offered us in the market can be taken advantage of without risk of any ultimate loss (as long as the econmy as a whole keeps on functioning) by the methods of formula planning.

The merits of investment timing by formula plans have been acclaimed and praised by many authorities. But, to the best of my knowledge, never has there been a thorough attempt to integrate the idea of formula plans into a fabric of the basic foundations for an over-all investment criterion such as is presented in this article—sketchy as it may be.

There are a number of formula plans that make use of the past behavior of stock prices in the methods they prescribe for the planning of investments, on the assumption that the future will most likely be a projection of the past. However, it is possible to plan an investment program that assumes no knowledge of the past and pretends no prophecy of the future, and yet can be relied on to prove profitable—at least more profitable than the results that can be accomplished by simply using the method of dollar averaging, which, as we saw, would itself yield results of "sound profitability." The method to be used would be as simple as that of buying cheap and selling dear, which can be accomplished by the use of the so-caled constant-ratio plan, preferably modified to include variability of the ratio—without any preconceived norm (either of intrinsic value or any other type of projections of trends).

If we start with a certain ratio of bonds and stocks, and if we not only equalize the ratio in terms of dollars, as there occurs a certain percentage of discrepancy in this ratio in market prices, but also switch to greater or smaller quantities of stocks, as the prices of stocks decline or advance, respectively, we will always be buying stocks cheaper than we sell them for. Furthermore, if we combine this process with the method of dollar averaging, by investing at periodic intervals a certain additional sum in our fund, then it can be feasible to attain the best possible results in complete ignorance of what will happen in the future—as long as the trend of prices does not continue downward indefinitely (an unlikely condition, which we found best to rule out of consideration for reasons given above).

It should be noted, of course, that dollar averaging can be practiced, more or less in a uniform manner, even with funds that are already in existence or that do not have a regular inflow of investable capital. Under such circumstances the method to be used would be to transfer a certain small percentage of the fund, together with its yield, into the newly designed fund, such that, by the time the original fund is completely transferred, the newly created fund has grown to such a size (owing to additions of its yield or a part thereof) that it will have a yield of approximately the same size as the original bits of transfers and original yield combined.

III. SOUND INSTITUTIONAL INVESTMENT

We have considered the soundness of the profitability that common stocks may offer, and also we have explored the areas of profitability of stocks; namely, a greater yield than bonds, a tendency for increased earning power, accompanying growth, and also the possibility of making profits out of the market behavior of stocks. Having seen that common stocks are more profitable than bonds for a number of reasons (to which one could add their being mediums of hedge against inflation, even if they are not perfect instruments in this respect), and also having seen that their profitability is a sound one, we can have no doubts that they should form a part of investment programs. Now we can turn to our original problem of deciding on a criterion for the best proportions of bonds and stocks to be held in an investment portfolio.

AN INVESTMENT CRITERION

We should notice, naturally, that, since the best sure way of obtaining highest profitability out of common stocks lies in holding varying proportions of stocks, the criterion in question should indicate not a fixed amount, but rather upper and lower limits through time. Also it should be apparent that the lower limit should be zero (that is, no stocks at all), since a reduction of the stock proportion could gradually lead to this point from which there will be no reason for shunning (although one might do well to delay the reaching of this point gradually as much as possible).

The main problem, therefore, would really consist of indicating an upper limit of a proportion of common-stock holdings. From a purely investment point of view, this upper limit should be decided for each fund separately.

Each fund should first decide the maximum amount of drain to which its holdings are subject. This portion should, of course, be invested in bonds that provide the fund with its constant safety (even if this constant safety be in dollars and not in real purchasing power of capital).

The remaining portion should constitute the upper limit of common-stock holdings, which offer us sound profitability. In the event that the maximum proportion of common-stock holdings of a fund is limited by law, then this limit would have to be used as the upper limit, if this limit is not so high as our limit would have been in the absence of legal regulations.

In addition, it can be noted that, for each periodic investment, the proportion of stocks should best be at the midpoint between zero and the upper limit (since, by the method of dollar averaging, we are bound to average out on the midpoint of the fluctuations of the stock prices), and the increase or decrease of holdings should be scaled to make the changes smaller and smaller, in order to be able to accommodate the fund to take maximum advantage of even the widest fluctuations, about which we are by assumption admitting full ignorance.

* * *

"The 'safety' sought in investment is not absolute or complete; the word means, rather, protection against loss under all normal or reasonably likely conditions or variations."—*Graham and Dodd, Third Edition*

SOUTHERN NATURAL GAS COMPANY

Birmingham, Alabama

Common Stock Dividend No. 66

A dividend of 40 cents per share has been declared on the Common Stock of Southern Natural Gas Company, payable September 13, 1955 to stockholders of record at the close of business on August 31, 1955.

H. D McHENRY,
Vice President and Secretary

Dated: July 30, 1955

Harbison-Walker Refractories Company

Pittsburgh Pennsylvania

July 21, 1955

Board of Directors has declared for quarter ending September 30, 1955 DIVIDEND of ONE and ONE-HALF (1½%) PER CENT or $1.50 per share on PREFERRED STOCK, payable October 20, 1955 to shareholders of record October 6, 1955.

Also declared a DIVIDEND of 62½c per share on COMMON STOCK, payable September 1, 1955 to shareholders of record August 10, 1955.

G. F. CRONMILLER, JR.
Vice President and Secretary

Pullman Incorporated

89th Consecutive Year of Quarterly Cash Dividends paid by Pullman Incorporated and predecessor companies

A regular quarterly dividend of seventy-five cents (75¢) per share will be paid on September 14, 1955, to stockholders of record August 19, 1955.

CHAMP CARRY
President

PULLMAN-STANDARD CAR MANUFACTURING CO. Built by Pullman Standard

M W KELLOGG

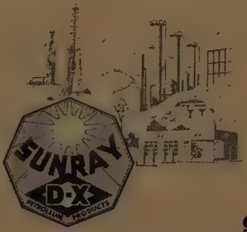
TRAILMOBILE

HOW AN OIL COMPANY GROWS . . .

If a retail store wants to expand it takes on more space, and fills it with merchandise. A factory can expand its facilities by building and buying additional machinery. An oil company cannot grow by such simple means.

SUNRAY grew, not in one city, one county, one state, or even one country. In order to produce and refine oil it was necessary to operate from the Southwest to the West Coast; from the Gulf of Mexico to Canada. MID-CONTINENT, which grew through its marketing operations, spread out from Oklahoma into neighboring areas until today there are D-X Products Dealers in 26 states.

SUNRAY and MID-CONTINENT, as two separate companies, could have continued to grow as they had in the past. However, by combining the facilities of two organizations into one company, economies were effected that will enable SUNRAY MID-CONTINENT OIL COMPANY to grow faster and more efficiently than ever before.



There is no set rule for making an oil company grow. SUNRAY took one road to growth, MID-CONTINENT another. Today two companies, that are now one, travel the same road to an even greater future opportunity.

Watch SUNRAY MID-CONTINENT Grow

D-X is the brand name of quality products manufactured by D-X Sunray Oil Company, a wholly-owned subsidiary.

SUNRAY MID-CONTINENT
Oil Company

SUNRAY BUILDING TULSA, OKLAHOMA

Look closely at this little black box

...IT'S LOADED!

No matter who you are or what you do, the chances are good that this little black box will have a far-reaching effect on your way of life within the very near future.

For this is "TRANSAC"*—*the smallest, lightest, and fastest "electronic brain" yet announced*—and its development by Philco scientists finally unlocks the door to mass production and widespread use of electronic computer and control systems in industry, science, business, and the Armed Forces.

And a well-locked door it was—

Because the demand for the benefits of automatic computation mushrooming out of World War II has, until now, put a breaking strain on computer design. As they have grown more complex they have grown more cumbersome and harder to produce.

Their thousands of vacuum tubes have generated not only heat and the need for bulky air-conditioning, but also problems of power consumption and maintenance. And their size and weight have barred their use in many urgent military applications.

To this dead-end situation Philco engineers brought a fresh outlook and combined it with their experience from pioneering the "Surface Barrier" Transistor.

By utilizing the unique high frequency properties of the Philco "Surface Barrier" Transistor, they evolved an entirely new concept in computer design—the Philco *Direct Coupled* Transistor Circuits.

This "direct coupling" of transistors is the key that unlocks the door.

By one basic stroke, it cuts sharply the number of elements in a circuit, pares down the bulk and weight, slashes cost and production time . . . and speeds up computation!

"TRANSAC", for example, is one-third smaller and lighter, and 10 times *faster* than any transistorized computer announced to date. It operates on one small battery, with less than 1/1000th of the power needed by a comparable vacuum tube computer, and generates less heat than a Christmas tree bulb.

Yet it performs all computer functions—multiplies, divides, compares, and "carries" for 19 binary digits and algebraic sign, and also performs 416,000 complete additions or subtractions per second!

The civilian applications for this system are limitless. And the military uses—with the emphasis on lightweight portability, low power consumption, and high accuracy—are only to be hinted at.

Thus "TRANSAC" becomes one more example of the teamwork of Research, Engineering, and Application that has made "Philco" synonymous with "leadership" in Electronics.

*"TRANSAC"—*Trademark of Philco Corporation for Transistor Automatic Computer*

ANOTHER FIRST FROM THE PHILCO LABORATORIES

Stock Prices and Current Earnings*

NICHOLAS MOLODOVSKY

MANY FACTORS influence the fluctuations of stock prices. Among them, corporate earnings stand pre-eminent in the minds of investors and speculators. And it is earnings that are most current, that is, those of the last fiscal year or even of a brief interim period—especially at the time of their release—that are watched with the greatest attention and eagerly compared with the corresponding period of the immediate past.

It is a widely held and, for many people, seductive belief that current earnings and prices of common stocks move in closely related swings and that changes in current earnings largely account for the fluctuations of stock prices.

The historical record seems to justify this view. Figure 1 traces the changes in the annual means of stock prices and in the annual earnings from 1871 through 1951. The data are those of the Cowles Commission and Standard & Poor's indexes.[1] This stretch of eighty-one years is sufficiently long for extensive and numerous observations.

It is apparent from the chart that there exists a concurrence in the movements of the two curves. At times, the similarities are quite striking.

Stock prices and corporate earnings are respectively plotted as the top and the bottom lines of Figure 1. The chart shows also annual changes in price-earnings ratios. The ratios are based on the chart's own data of prices and earnings.

As far as concurrencies of directions between prices and earnings are concerned, they may be observed from the movements of the respective curves of these two factors; and the ratio line may be used, to some extent, as an indicator of the degree to which the amplitudes of the respective fluctuations of prices and earnings differ from each other. When prices and earnings remain unchanged, their ratios cannot change either. Nor will the ratios change when prices and earnings advance or recede at the same rate.

During the period covered by Figure 1, there were various times when the *P/E* ratio did move practically sideways. The longest span of time during which the *P/E* line changed little lasted from just before the turn of the century until the outbreak of the First World War.

These years present a very clear case. Prices and earnings moved practically in unison, tracing nearly parallel lines. The conclusion is warranted that the sideways movements of the price-earnings ratio line during this period confirm the existence of a close interdependence between stock prices and current earnings.

This is a simple case. Frequently, it is more difficult to draw from Figure 1 conclusions concerning the relation of prices to earnings. Changes in their relative movements can be quite complex. Both factors can move in different directions and at varying rates of change, producing each time different effects on the *P/E* line. And even very similar changes in the ratio can sometimes conceal very different combinations of changes in the numerator and the denominator.

It can happen also that concurrent changes of prices and earnings are accompanied by violent shifts in the *P/E* ratio, while their divergent movements produce a small or negligible effect on the *P/E* line. In 1894, the *P/E* ratio rose 49.2% while both prices and earnings fell.

On the other hand, the ratio declined only 4.8% in 1874, when the two factors diverged. Similarly, in later years, the *P/E* ratio rose 312.2% in 1932 during a simultaneous decline of prices and earnings, but was lifted only 10.2% in 1924, when the two variables took opposite directions.[2]

A graphic presentation can convey a general impression only. It does not measure the relation between the factors. And without measurement we cannot ascertain to what extent a change in current earnings would find a reflection in stock prices.

But a statistical method exists that makes it possible to state this relation in numerical terms. It is correlation analysis.[3]

COMPUTING THE CORRELATION

If the relationship between current earnings and stock prices is computed for the entire period from 1871 through 1951, it amounts to 64.3% in terms of indexes used in this study. This is not a very close relation; it shows that other influences also were at work. But it brings out nevertheless that, during this period, fluctuations of stock prices were related, to a fairly significant extent, to changes in current earnings.

However, this period is long. Figure 1 shows that, in its course, the respective movements of prices and earnings varied greatly. Unusually high or low relationships in some of the years may have unduly affected the average figure. The individual characteristics of some of the shorter segments of this extended period should therefore be considered.

A practical manner of making such a subdivision is to cut the period into several approximately equal parts. This should not be done in a mechanical way. The subdivision should preserve intact expanding and contracting phases of corporate earnings. It should also anchor each subperiod at an important turning point of the movements of stock prices.

It would seem desirable, moreover, to have the closing

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*The author is indebted to Miss Catherine May for drawing the charts and making the computations used in this study. Miss May contributed also several of the notes accompanying this article.

[1] See note at end of article.

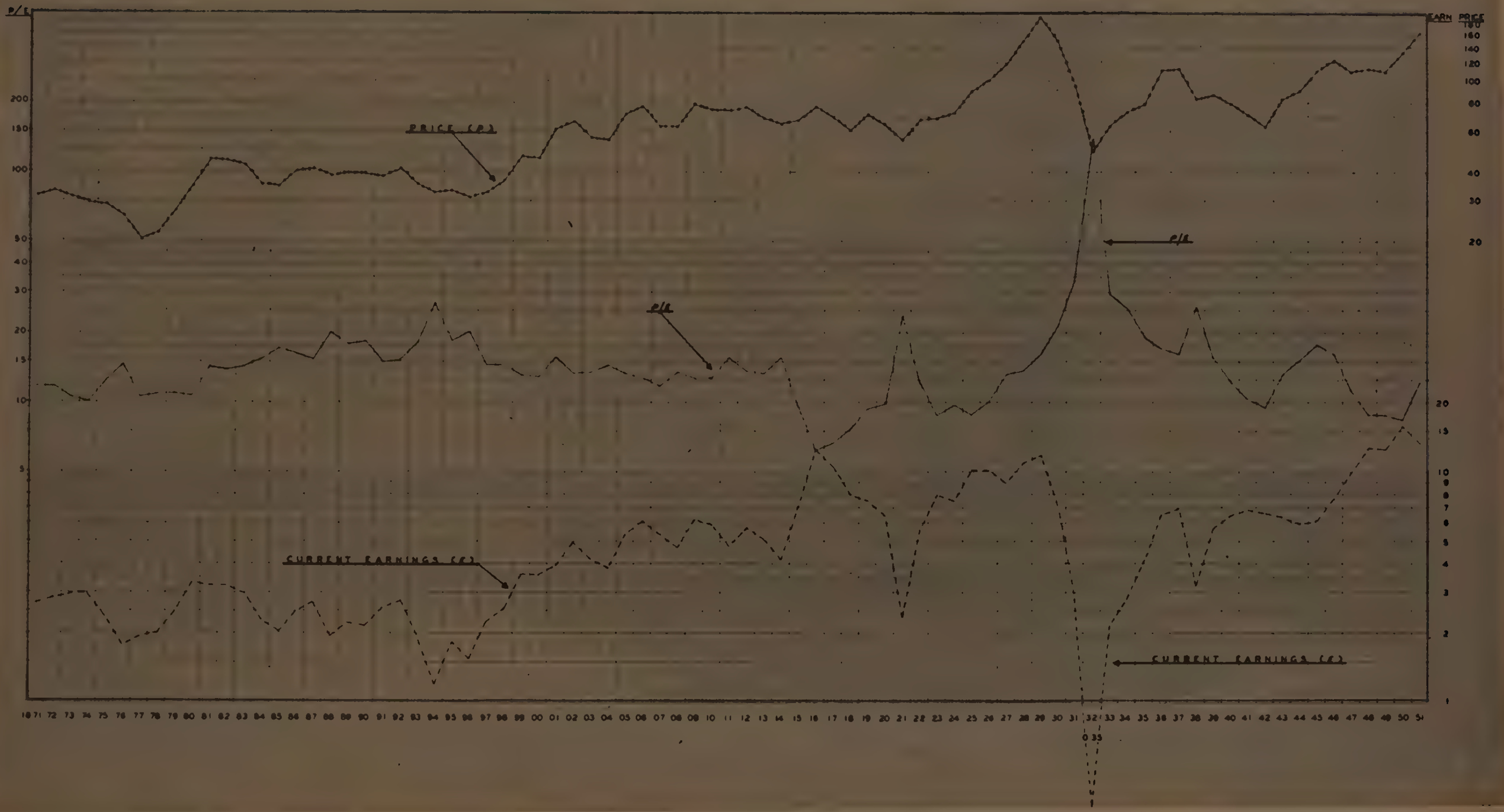


Figure 1. Current earnings, prices, and price-earnings ratios, 1871–1951.

year of each subperiod serve as the opening year of the one that follows. This would avoid sudden cleavages between them and secure a more homogeneous comparison. The following classification could meet these various requirements:

1871–1894
1894–1914
1914–1937
1937–1951

Out of these four subperiods, only one shows the existence of a close relation between changes in current earnings and fluctuations of stock prices. During the other three periods this relationship was quite small. This is indicated by Table 1.

Table 1. Percentages of Relation between Variations of Current Earnings and Stock Prices, 1871–1951

1871–1894	15.6%
1894–1914	93.0
1914–1937	26.5
1936–1951	17.2

Cowles Commission indexes were used in the computations for the first three of the above four periods. Barron's indexes were used for the latest period; they provide a link with some previous articles of mine published in THE ANALYSTS JOURNAL which were based in part on Barron's data. Other indexes than the Cowles were needed, in any event, as the latter do not extend beyond the '30's.

There is a slight overlapping between the last two periods of the table. The reason for starting the last period with 1936, rather than with 1937, is that dividend indexes became available in the Barron's series beginning with 1936, and they are used in the next section of this study.

The figures in Table 1 are rather striking. Correlation analysis shows that, with only one historical exception, prices and earnings change at widely divergent rates, even during periods of their directional concurrence. Most of the time, correlation between them is so low as to preclude the existence of any significant causal link connecting their movements.

CURRENT EARNINGS AND OTHER FACTORS

What is true of current earnings is also true of some other selected factors. Table 2 summarizes the results of a statistical excursion into the relations between the fluctuations of stock prices and the most obvious factors whose changes could affect them. Many could be listed. But the two factors which, in addition to earnings, seem to be particularly important are dividends and the cumulative influence of the price trend itself. The latter may be designated as trend momentum.[4] This analysis deals with the most recent subperiod listed in Table 1.

Table 2. Percentages of Relation between Stock Prices and Different Combinations of Three Selected Factors, 1936–1951

Dividends, current earnings, and trend momentum	56.3%
Dividends and trend momentum	51.9
Current earnings and trend momentum	44.7
Dividends and current earnings	42.1

These three factors together accounted, during the period, for not much more than half of the possible total influence on the formation of stock prices. By alternately eliminating them, it is possible to establish the individual influence of each on prices.

So, for instance, the difference between the percentage figures appearing on the first two lines of Table 2 is 4.4. The eliminated factor is that of current earnings. This difference of 4.4% represents the net increase of explained influence on fluctuations of stock prices resulting from the addition of current earnings to dividends and trend momentum.

The respective direct effects which the changes in each of the three factors had on the fluctuations of stock prices are shown in Table 3.

Table 3. Percentages of Net Effect of Variations of Three Selected Factors on Total Variance of Stock Prices, 1936–1951

Trend momentum	14.2%
Dividends	11.6
Current earnings	—4.4

The net influence on the fluctuations of stock prices during the years 1936–51 of each of these three factors is extremely small. It is practically negligible.

The smallest of them all is current earnings. And it is not only insignificant, but, moreover, it is negative: that is, inverse. This is not obvious from the information contained in Table 2, but it can be established by partial correlation analysis.[5]

The reason for the discrepancy between the 17.2% of Table 1 and —4.4% of residual difference in Table 3 comes from the fact that the latter measures only the *direct* influence of current earnings on prices. It does not reflect their indirect influence. It does not measure that part of the relation of current earnings to prices which results from the interaction among the various factors.

Each of the three factors included in the calculations not only acts directly on prices, but also exercises an indirect influence on the other factors. The computation of a relation between prices and the three selected factors deals, in fact, with a complex network of mutual interactions.

SHORT-TERM INFLUENCE OF CURRENT EARNINGS

Figure 1 and the correlation analysis have one characteristic in common. They deal with annual data. Therefore, they fail to reflect whatever short-term interdependence there may exist between changes in corporate earnings and fluctuations of common stocks.

But, even within much shorter intervals than annual, a high correlation between stock prices and current earnings still remains an exception. My article in the May 1953 issue of this JOURNAL contains two charts which, between them, cover the period 1918–51.

These charts plot the respective monthly changes of prices, earnings, and their ratios. In a manner even more dramatic than in the annual figures shown in Figure 1, these monthly charts bring out the wide fluctuations of price-earnings ratios.

When a high correlation between changes in prices and earnings is present, they advance or recede together and at a closely similar rate. The price-earnings ratio then changes very little or not at all.

Examples of a close relation between current earnings and stock prices do occur more frequently when the time curve is broken up into smaller pieces. But the fragments which contain them are so tiny that they do not alter the general pattern of absence of relationship.

STRUCTURAL CHANGE

In fact, the lack of relation between stock prices and current earnings represents so much the general rule that it is the exceptional case of their lasting concurrence during the period 1894–1914 that seems to be in need of explanation.

The reason why current earnings suddenly became such an important determinant of stock prices during the period in question was that there took place a reappraisal of basic corporate earning power by investors. Soon after the United States emerged from the depression of 1894–96, and current earnings had risen to an unprecedented level, investors boldly conceived the idea that the earning power of American corporations had doubled. This was their way of marking the transition from the nineteenth to the twentieth century.

Some of the characteristics of these amazing years have already been noted.[6] And a telling description was given in a recent book which speaks of the extent to which "the United States enjoyed a radiant prosperity. Businessmen, labor, farmers and professional people, shared the exhilaration brought by increasing production, rising incomes, and a bettering standard of living. Never before in our history had technology and invention made such large contributions to comfort and convenience: The telephone, the electric light, the bicycle, the phonograph, the gas cooking range, and modern plumbing were becoming familiar to most of the population. Factories were lowering their costs. Between 1901 and 1913, the ton-mileage of the railroads practically doubled. Close students of economic tendencies saw that one element in giving Americans a more bountiful cornucopia of plenty was a striking change in the form and structure of industry. Three ideas that went back to James Watt and Eli Whitney, the ideas of standardization, simplification, and interchangeability, were being applied as never before to yield a quantity production of machine goods. . . . In Detroit the boom in motor manufacture was a theme of exultation among many businessmen: Hardware dealers, specialty manufacturers, ironmasters, real estate interests, and builders. Newspapers joyously hymned it, and ministers even referred to it from the pulpit."[7]

During this period, the change in American economic life was so powerful and all-embracing that investors instinctively identified current earnings with earning power, and they capitalized stocks on that basis. Subsequent developments justified investors' faith. The persistent rise of current earnings to a higher plateau gradually became sufficiently well established to qualify as a new level of earning power and to justify the generous capitalization of current earnings by investors.

CURRENT EARNINGS AND EARNING POWER

All of us can mention cases drawn from personal experience when purchases or sales of stocks prompted by recently published or anticipated current earnings have been vindicated by results. How can they be reconciled with the finding of a habitual absence of relation between current earnings and stock prices?

The lack of correlation between stock prices and current earnings carries a deeper meaning than the mere surface observation that the relation between these factors is typically small and, at times, nonexistent or even negative. The more important economic truth is that current earnings constitute an unsuitable base for the capitalization of stocks, and that long-term earning power alone can offer an adequate foundation for the erection of capital values.

This distinction goes to the heart of the matter. It also offers a key for appraising the significance of individual cases. Once this test is applied, most exceptions will appear less exceptional than they seem. When a change in current earnings foreshadows a change in earning power itself, the economic significance of the relation with stock prices is transferred to the latter.

It is probable that, if two lists were compiled showing for any given year, or for a series of years, stocks with the widest gains and the sharpest declines, many among them would also reveal substantial corresponding changes in current earnings. It is in such observations that the belief in the interdependence of stock prices and current earnings often has its roots.

But, by probing deeper, the additional discovery would probably also be made that in cases where the changes in prices were of an enduring nature, changes in current earnings were also sufficiently lasting to affect earning power as well. And that, when they happened to be nonrecurrent, price changes were soon leveled out.

Still, even if he should accept this explanation, a careful thinker will not remain completely satisfied.

He will ask himself why and how it could have happened that a factor that has apparently so little relation to the formation of stock prices had come to be considered as one of their prime movers? And, if a significant correlation between stock prices and current earnings is usually absent, but a directional concurrence often persists, he would want to know how the latter can be accounted for. Finally, he would probably ask for a demonstration of the mechanisms by which the various theoretical findings operate in actual practice.

PRICE-EARNINGS RATIOS

The price of a stock would make no sense and would be no more than an irrelevant number if it did not represent an attempt to express the stock's value; i.e., its capital worth. The reason why the ratios of stock prices to current earnings cannot be capitalization multipliers is that capital is a store of wealth.

Current earnings simply do not offer a broad-enough basis for erecting on it a capital structure. Capital is substantial. Its income-producing mass cannot be appraised or estimated from so slim an indication as the earnings of a single year, nor even of a few years.

Nevertheless, despite the fact that the ratios of stock prices to current earnings are, by their nature, quite unsuitable for such a role, in practice they are often treated as capitalization multipliers. This attitude toward them has developed out of their ready handiness as financial yardsticks.

Business life moves fast, and, to keep up with it, businessmen are often compelled to resort to short-cuts. Just as the telegraphic language has to be brief, a rapid-fire communication uses abbreviated financial concepts.

When individual ratios of prices to current earnings are computed for quick ready reference, they carry a clear meaning. But, when they are used as capitalization multipliers and are confronted with one another, strange things begin to happen:

"When the student compiles a large assortment of price-earnings ratios, he is likely to be bewildered by their diversity and inconsistency. Since many stocks cover a wide price range within a single year, this would mean that their ratios will vary correspondingly in that year. The average annual ratio for nearly every stock is likely to be very different in one year than another. Finally the ratios of different stocks when observed at the same moment could readily range from as low as five times to as high as twenty-five times current earnings. It seems almost impossible to make any degree of order out of this chaos."[8]

In fighting his way toward clarity and reason, an analyst soon discovers there is method in this madness. "A strong, successful, and promising company usually sells at a higher multiplier of current or average earnings than one that is less strong, less successful, and less promising."[9]

Through constant observation and comparison analysts evolve an empirical series of "multiple multipliers." Different types of stocks acquire varying price-earnings ratio characteristics, depending on the industry to which they belong, and reflecting such factors as capital structures, financial conditions, managerial records, earnings histories and prospects, dividend payment policies, and risk.

This results in a cumbersome structure. Yet, as the flow of streaming water shapes and smooths the surface of stones and pebbles, the polishing effect of ceaseless practice has sufficiently refined this technique to make it serviceable for working purposes. It would be making a show of unwarranted reformer's zeal to try to change the established system.

Still, it may happen that, when the working methods do not remain confined to their limited arena of technique, but begin to grow the seeds of a doctrine, the conceptual short-cut on which they are based tends to infiltrate adjacent areas of thinking.

WIDENING CIRCLES

The habit-forming practical expediency of using current earnings as a base of capitalization has served to strengthen the impression that current earnings are an important determinant of stock values and, thereby, of stock prices as well.

Partly from this belief have spread ever-widening circles of notions concerning allegedly causal relations between other factors and prices of stocks. The most conspicuous among them is the relation between stock prices and business. Investors eagerly scan general economic conditions in production, distribution, and finance, and watch also indexes of specialized business activities.

Once the thesis is accepted that current earnings produce changes in stock prices, the conclusion inevitably follows that changes in business conditions, which anticipate changes in current earnings, should constitute an even more sensitive, more barometric and, therefore, an even more valuable indicator or forecaster of what stock prices are likely to do. But, conversely, should it be true that stock prices are independent from current earnings, then they should be even still less sensitive to changes in business conditions. Stocks are further removed from the latter than from corporate earnings which are their nearest economic neighbor.

These spreading circles of theoretical contagion, fanning out from the center of acceptance of ratios of stock prices to current earnings as capitalization multipliers, reach even into areas of thought and action where they affect decisions of public policy. The so-called "cost-of-money" theory of an economically sound rate of return developed by the Federal Power Commission must feel the impact of the method used for capitalizing stock values.

CAPITALIZATION OF EARNING POWER

The fact that price-earnings ratios based on current earnings are not true capitalizers explains why they are so ebullient and why they move over so much of the map in Figure 1. They have to make adjustments for the departures of the volatile current earnings from the much more slowly changing earning power.

This happens not only with stock averages, such as those appearing on Figure 1, but also when individual stocks are concerned. In the latter, it finds an expression in the mechanism of adjustment by means of multiple multipliers for all the various individual features.

Basically, however, such efforts to appraise factors used for selecting a multiplier, are no more than empirical roundabout methods of estimating a company's basic earning power, and the degree of deviation from it of current earnings. In fact, multiple multipliers constitute a system of ratings showing the extent to which current earnings approach or depart from earning power.

STOCK AVERAGES VERSUS INDIVIDUAL STOCKS

The functioning of this mechanism becomes more clearly visible when it is observed not in the necessarily more erratic action of an individual stock, but in the cross section of a comprehensive average of a great many stocks, in which individual peculiarities neutralize each other and are filtered out, leaving in evidence what they all have in common. Special characteristics disappear in the crucible of the general index.

Standing, as it does, for the formidable mass of the entire industry, a broad general index enjoys an immense advantage in durability and stability of earning power, as against the uncertainty of that of individual equities. And, by becoming generalized, the findings based on broad indexes also gain in significance.

When attention is transferred from individual stocks to all stocks, the multiplicity of multipliers becomes dissolved. It has its *raison d'etre* in the multiplicity of differences between individual stocks which has been replaced by one average case representative of them all.

Statistical investigation will show that, for capitalizing the earning power of a representative share, which is an average of all shares—or at least of a great many—there can exist one capitalizer only, and that it changes very little through time. [11] This is so because the basic conditions determining appraisals of capital worth are rarely subject to rapid and drastic changes.

The greater permanency and stability of its earning power entitle a general index to a higher capitalizer than individual stocks could command. Yet it sets up a goal or standard which the capitalization of the earning power of single companies will tend to approach to an extent dependent on its own durability.

As water seeks a constant level throughout different communicating containers, there exists a nivellation of capital values. Financially it should not matter whether the return produced by capital is secured from the manufacture of steel or spaghetti.

ECONOMIC EXPANSIONS AND CONTRACTIONS

Shopping for values is the backbone of investment. It expresses itself in the capitalization of basic earning power. The role of current earnings is restricted to being the stuff out of which earning power is made.

In the valuation process, the relation between stock prices and current earnings is that of distant cousins. But there also exist between them some affinities which are not connected with value. They are rooted in their mutual dependence on the forces generated in the course of economic expansions and contractions.

As they unfold their complex sequence, they bring about many different interactions between prices and earnings. The mechanism controlling their relations in this sphere becomes more clearly visible through a systematic classification of their respective changes. Since price-earnings ratios reflect the action of both prices and earnings, they constitute a good tool for accomplishing this purpose.

EXTRICATIO LABYRINTHI

This Latin subtitle was inspired by the work of a great jurist. Laboring four centuries ago, Dumoulin had to tackle, on one occasion, a complicated problem of classification.

To lead his readers safely through the darkness and the convolutions of the legal labyrinth in which they could get lost, the author gave them ten keys and three guiding threads.[12] By curious coincidence, in classifying the interrelations between changes of prices, earnings, and price-earnings ratios, it can be discovered that they fall also into 13 natural combinations.

The changes in P/E ratio are determined by the interactions of two factors. There are ten possible combinations in their respective changes that can bring about a rise or a decline of the ratio; three combinations can cause it to remain unchanged.

The ratio will rise under five sets of conditions:

1. When both prices and earnings are rising, but prices are rising relatively more.
2. When prices are rising, but earnings remain stationary.
3. When prices are rising, but earnings are declining.
4. When prices remain stationary, but earnings are declining.
5. When both prices and earnings are declining, but prices are declining relatively less than earnings.

Needless to say, the ratio will decline under five sets of conditions also. These will be symmetrically inverse to the above. A little probing will show the three possible combinations under which there would be no change in the direction of the ratio.

An appendix to this study submits a complete table of classification of all annual combinations, from 1871 through 1951, of price-earnings ratios, earnings, and prices. The statistical data are the same as those in Figure 1. To make the table more complete, occasional references are made in it to some other indexes as well.

This table immediately reveals that, in the overwhelming majority of all historical cases, current earnings and price-earnings ratios were moving in opposite directions. Figure 1 also leaves little doubt in this respect. It signifies that stock prices tend to discount the rises of current earnings and to compensate for their declines.[13]

This observation may be stated in different terms. Earnings are more volatile than prices. When they both rise, but the ratio P/E declines, such a result can take place only if E (earnings) rises faster than P (prices).[14]

Simple arithmetic shows that, when the denominator increases faster than the numerator, the ratio becomes smaller. If $P/E = 1/2$ and P doubles, while E increases fourfold, the resulting fraction falls from $1/2$ to $2/8$; that is, to $1/4$. And, of course, when both P and E are declining, the ratio P/E can rise only if E declines faster than P.

During the eighty-one years contained in the table of combinations, there were only a few cases when current earnings and price-earnings ratios moved in the same direction. Six such occurrences took place when both earnings and price-earnings ratios rose. There were three occurrences when both earnings and price-earnings ratios declined at the same time.

The years in which these developments took place are important landmarks. The most conspicuous among them are the year 1907 which was marked by declining prices and the years 1901 and 1928–29 which were periods of rising prices.

The 13 possible combinations of changes in the numerator and denominator of the price-earnings ratio may be reduced to three basic cases:

1. The normal and most frequent occurrences take place when current earnings and price-earnings ratios move in opposite directions. They show a very wide range of price-earnings ratios.

In some of them, such as 1931 and 1915 (to take two extremes), the compensation for, or the discount of, changes in current earnings by prices is extremely drastic, thereby resulting in a very high ratio in 1931 and an extremely low ratio in 1915. But in others, such as 1910 and 1950, the year-to-year changes in price-earnings ratios come close to the zero frontier of compensation or discount. And, in between, there lie many varied gradations of shifts in price-earnings ratios.

2. The trends of these gradations of compensations for declining earnings, (i.e., rising ratios), and of discounts of rising earnings (i.e., declining ratios), converge toward the zero line at which price-earnings ratios no longer change but move sideways.

None of these cases of sideways year-to-year movements of price-earnings ratios actually shows a total absence of change. Such mathematical equalities can be only coincidental in the rather loose relationship of economic life. There exists instead a band of sufficiently small variations to justify their classification in the category of sideways movements.

The examples of sideways movements of price-earnings ratios throw the spotlight on those periods of stock-market history when stock prices and current earnings were advancing or receding at an identical rate of change. These are the periods when either current earnings had the fullest impact on the formation of stock prices or when both factors responded in an equal measure to cyclical influences.

3. In this narrow band or zone, wherein dwell the price-earnings ratios that may be justifiably labeled as unchanged, the birthplace of an important phenomenon of the economics of common stock may at times be found. The prevoiusly converging earnings and price-earnings ratios, after passing through a second phase which is that of sideways movements, sometimes enter a third phase of advancing or receding concurrently in the same direction.

On those occasions when they are rising, price-earnings ratios, instead of discounting the rise in current earnings, amplify and magnify the effect of this rise on stock prices. These are the very rare, in fact the very exceptional cases when stock prices change faster than earnings, while they are both moving in the same direction.

The historical table of 13 possible combinations or the three factors is essentially like a two-faced medal. Five cases appear on the same side of this medal—the one showing rising price-earnings ratios. They generally accompany declining earnings. Five other cases appear on the medal's reverse side. They show declining price-earnings ratios and mostly rising earnings. Three additional cases—those of unchanged ratios—are engraved around the rim of the figurative medal.

BASIC FORCES IN THE STOCK MARKET

The two principal forces which struggle for the possession of the symbolical medal are capitalized earning power and economic momentum. Capitalization, or value, predominates in the record of the classificatory table whenever current earnings are discounted or compensated for their deviations from earning power; that is, when price-earnings ratios and earnings move in opposite directions.

A typical economic expansion begins with declining price-earnings ratios. Current earnings begin to rise ahead of stock prices and continue to advance at a faster clip. On Figure 1, the period 1894–99 is one of the illustrations of this condition.

During the second phase of the rise, the advance of stock prices will be gradually catching up with earnings. Price-earnings ratios will continue to decline, but at a decreasing rate.

The advance of stock then starts gaining momentum. The time will come when both stock prices and current earnings will advance at the same rate, while the price-earnings ratio will be moving sideways. This constitutes the third phase of the advance.

The final stage is reached when price-earnings ratios begin to move in the same direction with rising current earnings, thereby amplifying the rate of the advance of stock prices. The market is then entering a phase of overspeculation, and the action of the price-earnings ratio may signal that stocks are approaching a change of trend.

This entire sequence is reversed during periods of contraction.

Needless to say, this is a very simplified and schematic description. Successive expansions and contractions bear little resemblance to one another. Many sideshows accompany the main play.

In particular, during the more recent period, manifestations of managed economy have been increasingly injecting themselves into the cyclical pattern. In the earlier years, the concurrence in the directions of stock prices and current earnings was much more pronounced. Yet, lately, numerous instances could be observed when prices and earnings not only failed to move together, but pushed the discordance to the extreme limit of traveling in opposite direction.

Perhaps the hypothesis may be advanced that these more frequent divergencies in the respective movements of the two factors are related to the activities of Federal authorities in the creation and control of money supply. Previously, the rise and fall of earnings may have had a greater relative part in the swelling and drying up of money flows, which are an important phenomenon of economic expansions and contractions. An expanding money supply is the mainstay of an effective demand for stocks.

FROM THEORY TO PRACTICE

Statistical calisthenics may have an austere theoretical charm. But the practical student is less interested in mental gymnastics than in working conclusions.

Figure 2 shows the capitalized earning power (price orbit) of an average of 50 high-grade stocks beginning with January 1937. And it indicates how the actual monthly closing prices of the same index compared with its price orbit or value.

Earning power is represented by a twelve-year moving average of current earnings. Its capitalization multiplier, which is a constant, has been computed as being 14.8. By applying this multiplier to the curve of earning power, the parallel curve of the price orbit, or value, or capital worth is obtained.

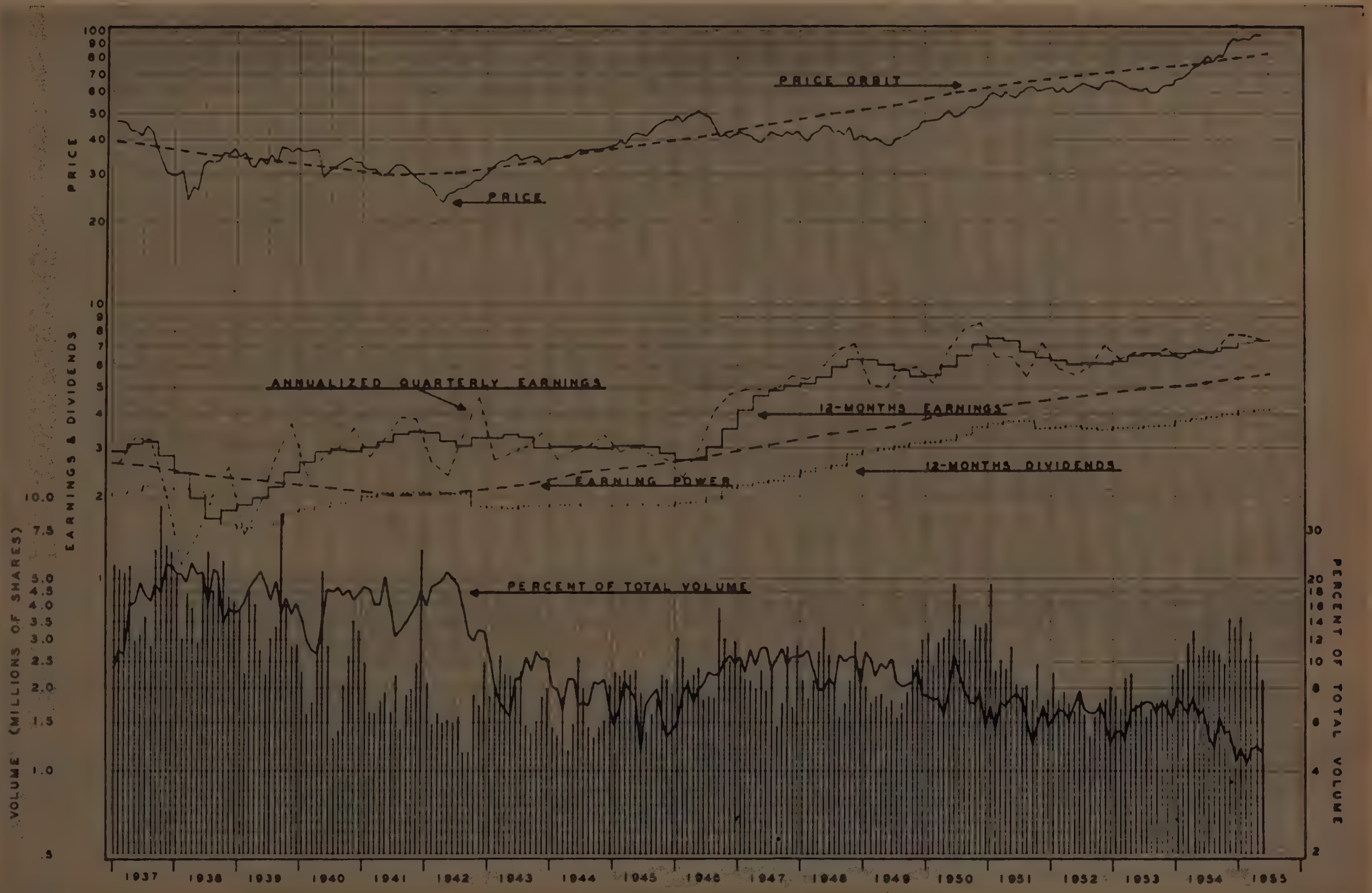


Figure 2. Value stocks, basic data, 1937–1955.

This chart was previously published in THE ANALYSTS JOURNAL of August 1954; its construction was there discussed in detail. It is now brought up-to-date through May 1955.

For the purpose of practical illustration of the relation of stock prices to current earnings, we could select on Figure 2 the most recent example of undervaluation of stock prices—that of the fall of 1953.

With respect to capitalization, or value, current earnings can be relevant only to the extent of their being able to bring about a reappraisal of estimated earning power. In a period of deep undervaluation, the publication of poor current earnings will not change the fact of undervaluation itself, and, at most, may modify it only slightly. On the other hand, when overvaluation exists, such as is shown now on Figure 2, a continuation of favorable current earnings is also unlikely to alter much the existing overvaluation.

In the autumn of 1953, the undervaluation was so drastic that there was no need of any rise in current earnings to justify, on the basis of value, a substantial advance in stock prices. A long and powerful backlog of many years of extraordinarily high current earnings had already been built into the statistical picture. It had lifted corporate earning power to such a high level as to make stock values almost impervious to the influence of declining earnings.

It was calculated in last year's study that, from its price level at the year end of 1953, this index of quality stocks could have risen almost 20%, even if, paradoxically, its current earnings had registered a decline by about the same percentage. Such a contrary action would simply have brought the average of these stocks in line with its value. And a rise of some 40% was called for in its price-earnings ratio, in order merely to bring it in line with the capitalization multiplier applicable to earning power.

In terms of value the situation was explosive. Money supply was there to make effective this supercharged potential investment demand. The ensuing massive advance of prices is now part of stock-market history.

At present, the situation is reversed. Quality stocks, in terms of our index, are overvalued. A few additional quarters of excellent earnings could modify only slightly the extent of the overvaluation but could not make it disappear. It would need a real structural change in the form of many years of high earnings to enable value to catch up with the price level of stocks.

Figure 2 reveals that, after eight years of persistent and, at times, drastic undervaluation, the index of quality stocks began to become overvalued in the second half of 1954. At the end of May 1955, the overvaluation amounted to 17.4%, as compared to 19.6% at the end of 1945.

In addition to their entry into a zone of overvaluation, there has occurred, in 1954, another interesting phenomenon as far as quality stocks are concerned. Their prices, earnings, and price-earnings ratios have all been rising. This accounts for their extraordinarily steep rise during this period.

As was mentioned in connection with the historical table of classification of price-earnings ratios, such phases are exceptional, and are usually precursory of a change of trend in prices. Since the overvaluation, however, has been of a relatively short duration, especially when confronted with the extremely long period of the preceding undervaluation, it could conceivably last for a while longer. In 1928–29, the simultaneous rise of prices, earnings, and price-earnings ratios extended over two years, and carried stock prices to much greater heights of overvaluation.

However, considerations based on historical comparisons are not much more than conjectures. Value analysis as such can provide no clues to the timing of a possible reversal of stock prices. In this respect, indications should be sought outside the realm of value. In so doing, it is well to realize that one is treading on very uncertain ground.

INTERNAL CONDITION OF THE MARKET

Figure 3 extends a similar chart submitted in an article published in this JOURNAL exactly a year ago. Since then considerable further progress has been achieved by the combined geometric price average of 100 quality and marginal stocks.

It was accompanied, until the end of 1954, by a marked increase in the relative activity of the marginal equities, as witnessed by the steep rises in the ratio of volumes. In this indicator, the activity of transactions in the marginal stocks stands in the numerator, while the volume of quality stocks occupied the denominator of the ratio.

At the time of this writing, that is, in the first week of June, the similarly constructed price ratio is still lagging very much behind the action of the price and relative volume indexes. It is not even halfway up the scale toward the level of culminations of both the 1937 and the 1946 bull markets.

And, even in terms of the ratio of volumes, which indicates the relative activity of transactions, the speculative exuberance has been considerably more limited than during the rise of 1942–46 and even that of 1949–51. This is equally true when it is compared to the bull market of 1932–37. It is not visible on Figure 3, which begins after the rise had exhausted its powers and was already losing its steam.

No preconceived conclusions should be drawn from this observation. Eventually, and in retrospect, it may become one of the peculiar characteristics of the present bull market. It is possible that it will come to its close without the speculative fireworks that have marked many of its predecessors. But facing a future which is still unrevealed, we may at least be allowed to point out this potential discrepancy with some of the notable cases of past experience.

If the economic momentum continues to gather strength, there are reasons to think that this experience may be repeated. Marginal companies have recently been showing in many instances a much wider earnings recovery than some of the basic corporations engaged in the same type of business activity. This has been true, for example, of steel, automobile parts, electrical equipment, and some other lines.

During the 1953–54 recession, marginal producers, as is often so, suffered greatly. Some of them showed deficits. But now their sales and earnings are, in many in-

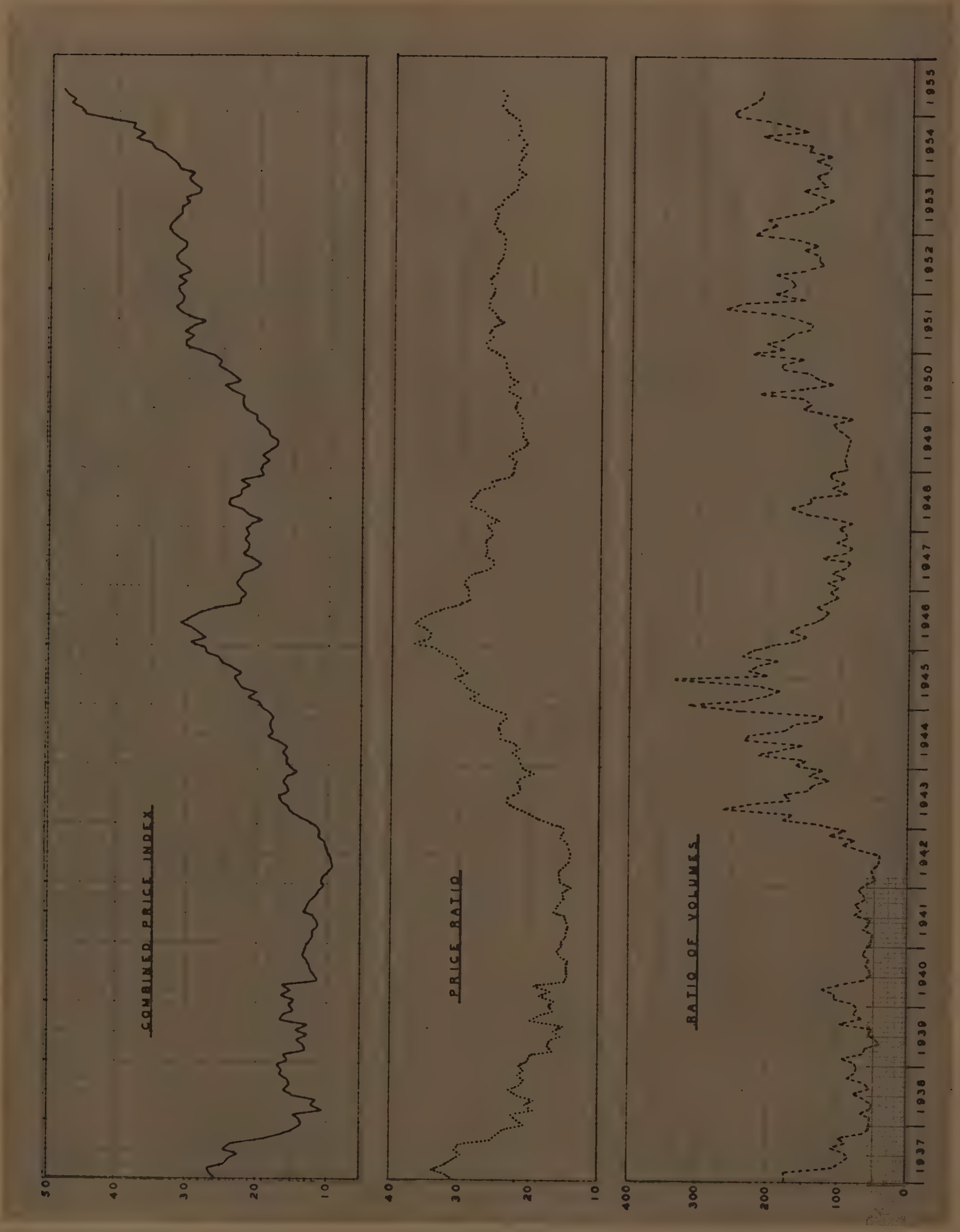


Figure 3. Price and volume ratios, 1937–1955.

stances, expanding much more sharply than those of their big brothers.

During the first quarter of this year, some of the marginal steel companies witnessed a 400% rise in their net, as against the corresponding period of 1954. The large steel companies, though doing well, showed no comparable gains. Estimates of the earning power of the industry's small producers may have to be revised upward.

Already some of the marginal steel stocks have shown a good measure of recovery. But the prices of many among them are still well below their 1951 highs, while those of the stocks of the giant steels have left these landmarks far behind them. There is room for much further progress of the stocks of the small steel companies, and they may be joined by marginal colleagues in various other industrial classifications.

INTRIGUING POSSIBILITY

If we look back into the past, another interesting possibility suggests itself. Some elements in the present situation are reminiscent of the structural change that took place in corporate earning power at the turn of the century.

Both the physical and the economic aspects of our country's growth since the end of the Second World War are too well known to need any presentation here. Known also is what this growth implies in the way of demand for services and goods, cars and homes, highways, hospitals and schools.

As a result, and despite heavy taxes, which, for a while, even found themselves boosted again by excess-profits levies, current earnings of quality stocks continued to rise, and show at present an increase of 172% over their 1946 low. They seem to be sitting on an entirely different and much higher plateau than the range within which they were habitually moving before the last World War. Even the long twelve-year moving average of current earnings, which was used to represent basic earning power, has more than doubled since 1946, advancing from $2.70 to $5.60 per index share.

Several fascinating accomplishments and prospects are part of the present industrial picture. An unmistakable technological revolution has taken place. The outlook for the use of atomic energy by industry is getting brighter.

The foreign situation is improving. There is a real possibility of better international relations and larger volume of trade.

Already American industry has demonstrated its ability to make an effective shift from the defense-dominated economy of 1953 to the largely peacetime business of 1955, by paying the price of only a brief and minor recession. If further reductions in defense expenditures should take place there would be good reason to hope that they would not affect business more seriously than they did on the preceding occasion. Furthermore, resulting reductions of taxes would produce an offsetting influence through increased consumer spending.

If the possibility of a structural change became an economic reality, its significance, from the point of view of the capitalization process in the stock market, would consist in the acceptance of the existence of a new and higher level of corporate earning power.

In terms of value stocks, which is the stock average used in Figure 2, their current earnings now stand at an annual rate of $7.37 per average share. This level is within striking distance of the all-time high made in the course of the first quarter of 1951.

It does not need much further progress to establish a new high record. How the 1951 level compares with the previous historical high of 1916 may be observed on Figure 1. It deals with different indexes, which changes the scale, but not the relative positions of the respective levels.

Even though earning power, as measured by a twelve-year moving average, has reached the highest historical level so far attained, the coming together of the lines of current earnings and earning power could require several years.

If, in the meantime, investors were ready to project such a development, they would be inclined, as they did early this century, to capitalize current earnings at the same rate as earning power. This would mean that the price-earnings ratio which is now being applied to the current earnings of an average value stock share, and which amounts to about 13, would tend to be lifted to approximately 15, in order to be in line with the constant capitalizer of earning power.

Compared with the exalted ratios at which some growth stocks are presently selling, such an average objective seems modest and even low. It is, however, stated in terms of a broad index containing not only industrials but also utilities and rails.

Furthermore, this discrepancy between the multipliers applicable to the earnings of growth stocks and those of a wide average is more apparent than real. When it can be visualized that, within a certain number of years, the continued rise of a company's business and profits will express itself in earnings twice as high as their present level, the multiplier applicable to current earnings is reduced by one half in terms of envisaged earning power. And, if it is believed that the company's growth should continue still further, its stock would be entitled to a still higher multiplier of current earnings.

If one can envision for International Business Machines an eventual earning power of $30 a share, the application of a capitalizer of 15 would produce a price of 450. This would account for the high multiplier that the market is alloting to IBM's current earnings. But to the extent that such a projection of the stock's potential earnings is too bold, it is correspondingly overvalued.

A general lifting of multipliers applicable to current earnings would occur when the investors' conviction of a structural change became sufficiently implanted in their minds. In terms of an average share, this higher price-earnings ratio would remain relatively stable, moving largely sideways, until the meeting of the earning power and current earnings would become an accomplished fact. Then price-earnings ratios would resume their normal fluctuations to reflect the compensations or discounts of the deviations of current earnings from the new level of earning power.

Needless to say, even in the exceptional case of structural change, which consists essentially in capitalization of current earnings instead of earning power, because the former are assumed already to represent the latter, other factors will also, as usual, affect the fluctuations of stock prices. Money and credit conditions will continue to remain important among them.

At the time of a credit stringency, the lack of buying power, or the necessity to sell caused by a financial squeeze, could temporarily force prices down even below the level of value, as happened during the financial crisis of 1907. Such interruptions, however, are likely to be of short duration, instead of developing into a long economic depression and a protracted bear market.

REFERENCES AND STATISTICAL NOTES

References and notes, as well as the appendix, may be obtained from the author.

Allied Chemical

Quarterly dividend No. 138 of $.75 per share has been declared on the Common Stock of Allied Chemical & Dye Corporation, payable September 9, 1955 to stockholders of record at the close of business August 12, 1955.

W. C. KING, *Secretary*

July 26, 1955.

ALLEGHENY LUDLUM STEEL CORPORATION
Pittsburgh, Penna.

At a meeting of the Board of Directors of Allegheny Ludlum Steel Corporation held today, July 28, 1955, a dividend of sixty cents (60c) per share was declared on the Common Stock of the Corporation, payable September 30, 1955, to Common stockholders of record at the close of business on September 1, 1955.

AL

The Board also declared a dividend of one dollar nine and three-eighths cents ($1.09375) per share on the $4.375 Cumulative Preferred Stock of the Corporation, payable September 15, 1955, to Preferred stockholders of record at the close of business on September 1, 1955.

S. A. McCASKEY, JR.
Secretary

CONSOLIDATED NATURAL GAS COMPANY
30 Rockefeller Plaza
New York 20, N. Y.

DIVIDEND No. 30

THE BOARD OF DIRECTORS has this day declared a regular quarterly cash dividend of Thirty-Seven and One-Half Cents (37½¢) per share on the capital stock of the Company, payable on August 15, 1955, to stockholders of record at the close of business July 15, 1955.

R. E. PALMER, Secretary

June 23, 1955

Highlights...of the **Annual Report** of

COSDEN PETROLEUM CORPORATION

for the year ended April 30, 1955

The past year was the most successful in Cosden's history. Statistical highlights include:

	1955	1954
Gross Operating Income	$50,187,453	$45,040,073
Net Income Before Taxes	5,602,709	4,230,848
Net Profit	3,545,709	2,813,848
Dividends Paid	979,783	776,440
Shareholders' Equity, Year End	17,584,650	14,784,736

PRODUCTION: With the bringing in of 28 new producing wells, year-end crude oil reserves were increased to an estimated 18,584,390 barrels; 1954's figure was 17,076,785 barrels. Crude oil production for the year was a net 932,414 barrels for a daily average of 2,590 barrels, and crude oil and natural gas production had a value of $2,697,545.

REFINING: Cosden's Big Spring Refinery processed 8,517,833 barrels of crude, a 10% increase. Last July a new hydrofluoric acid alkylation unit was put in operation for aviation gasoline production. Petrochemical sales increased 12%, and a new resin product for use in industrial coatings was introduced. Refinery will be expanded by adding a second catalytic reformer to produce 100-plus octane automotive gasoline and increase yields of petrochemicals.

MARKETING: Total sales of all products last year were 10,200,116 barrels (42 gallon), a 9% increase. Dollar volume of product sales was a record $47,720,157, an increase of almost 11%.

On May 23, 1955, the Board of Directors increased the quarterly dividend on the common stock from 25¢ to 37.5¢ per share.

If you would like to receive a copy of our Annual Report, please write:

COSDEN PETROLEUM CORPORATION
Post Office Box 1311
Big Spring, Texas

HIGHER COSDEN OCTANE

EAGLE
EP
PICHER

The EAGLE-PICHER COMPANY

American Building
Cincinnati, Ohio

The Board of Directors of The Eagle-Picher Company, at the meeting August 3, 1955, declared a quarterly dividend of thirty-seven and one-half cents (37½c) per share on the common stock of the Company, payable September 9, 1955 to shareholders of record August 19, 1955. This is the 61st consecutive quarterly dividend to be declared.

CARL A. GEIST,
Vice President and Treasurer

OUTBOARD MARINE

OUTBOARD, MARINE & MANUFACTURING COMPANY

DIVIDEND NOTICE

A cash dividend of forty cents (40c) per share on the Common Stock of the Company has been declared by the Board of Directors, payable August 25, 1955, to stockholders of record August 10, 1955.

H. M. FISHER, *Secretary*
July 26, 1955

HAZEL-ATLAS GLASS COMPANY

WHEELING, W. VA.

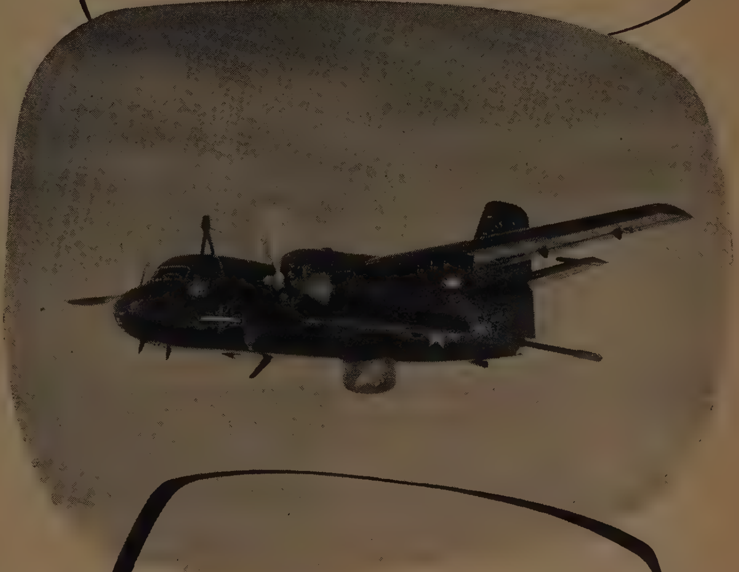
DIVIDEND NOTICE

A quarterly cash dividend of 30 cents per share on the Capital Stock of the Company, will be paid October 1, 1955 to stockholders of record at the close of business September 16, 1955.

H. G. LEWIS
Vice President
and Secretary

---

electronic detective:



Navy's newest weapon nabs subs . . . surfaced or submerged

The Navy's latest sub-killer, the Grumman S2F, in the hands of a skilled Navy crew can both find *and* destroy enemy submarines. For the S2F, Texas Instruments is an important supplier of both the radar equipment that sweeps the seas for surfaced subs and the magnetic airborne detector for tracking them when submerged.

Since World War II, TI has been an important manufacturer of electronic and electromechanical apparatus for defense. TI has developed many advanced devices for increasing effectiveness of modern weapons—such as supersensitive recording instruments that operate under severe shock and vibration. Using silicon transistors, tiny substitutes for vacuum tubes, TI produces military electronic systems that are more reliable even at extreme temperatures. Only Texas Instruments makes silicon transistors in commercial quantities.

TI's leadership in military electronics is enhanced by 25 years of making and using complex equipment for the geophysical industry . . . and through efficient utilization of professional and management skills. TI personnel comes from every part of America. More than 25% are graduates of the nation's major universities and colleges.

TWENTY-FIFTH YEAR OF PLANNED GROWTH

keep an eye on T/I

TEXAS INSTRUMENTS
INCORPORATED
6000 LEMMON AVENUE DALLAS 9, TEXAS

Book

Seemingly some readers object to our not having highly critical opinions regarding the books reviewed in this department. That is not, nor has it ever been the purpose of our reviews. We merely want to bring commendable studies to the attention of the members in the hope that they may find them advantageous, and suitable for their kinds of research. "It is much easier to be critical than to be correct."

A STUDY OF SAVINGS IN THE UNITED STATES

Raymond W. Goldsmith
Princeton University Press
Vol. I, 1138 pp, Vol. II, 632 pp,
$30.00

There is nothing more fundamental to use for an estimate of available investment funds than an appraisal of their size at the point of their origins. Savings bring support to all markets. Because of their significance the careful investigation of the sources of savings by Raymond Goldsmith will bring clarity of vision to many a student of finance. This will be especially true for analysts engaged in predicting long term needs for investment funds.

The study appears in two volumes, volume one covers derivations and distribution of income while volume two discusses some of the more important problems. It weighs the accuracy of the estimates. Volume three now nearing completion will be about collateral studies.

Since savings are considered the "process of financing economic growth" who saves and how long they will continue to do so becomes relevant. Savings in the United States has assumed large dimensions in the last fifty years. Although the rise was drastic it was punctuated by several steep downswings of short durations. Much of the variation in total savings correspond closely to the business cycle.

Some households, business units, as well as governments save and add to their assets. About two out of every three American households save, but even at the top 10 per cent one out of eight does not. At low income levels the proportion of household savers to dissavers are two out of three. The household savings generally conform with the business cycle.

In this department are summarized books, articles, and documents of outstanding economic or financial interest.

Helen Slade is the author of the book reviews. She will cooperate with members of the Society desiring source material for JOURNAL *articles and for research projects and studies.*

Sources and use of Corporate funds as well as corporate savings are said to be exceedingly difficult problems, yet of the most significant nature. They have changed considerably during the years studied. Beginning with 1916 such estimates are less complicated to establish since the tax return figures may be used. Of course, some change has been wrought by the share of profits taken by taxation. From 1946 to 1949 a corporate savings ratio of more than forty per cent "is the highest for any normal period of equal length except 1898-1901." Corporate savings are not like individual savings tied to the level of income, but reflect factors peculiar to the industry to which the corporation belongs.

Over one half of the $800 billion increase in the value of national wealth in the past half century has come from savings. A large upswing is seen in the growth of funds put into consumer durables. Individual savings ultimately find their way into satisfying current desires, and become available for investment in stocks, bonds, life insurance, general economic needs and construction.

The valuation of construction is rather startling. The net mortgage debt is substantial. Real estate has been the most important source of valuation gains for individuals. Table XXXIII indicates this dramatically. Stocks constitute a varying source of valuation differences. On the whole they contribute less than does real estate to the net gain of individuals between 1900 and 1949.

Chapter VIII in volume 2 on Savings through Securities is quite a necessary reading for thoughtful appraisers of values, as are all estimates on deposits of commercial banks. Commercial bank deposits as well as personal savings are examined in both volumes.

The excellence, the extent of the information furnished, with its far-reaching significance makes this book one of the most important contributions of recent years.

MINERALS IN WORLD INDUSTRY

Walter H. Voskuil
McGraw-Hill Book Co., 324 pp, $5.75

Minerals have exerted a strong influence on the standard of living of nations, and on their economic development. Where production is high people enjoy greater cultural advantages. In this top grade of creative understanding there are about a hundred minerals used for productive processes. These often reflect the needs of the country and the general well being of its citizens as well as the growth of corporations whose output satisfy wants.

Not only the modern way of living but today's stock markets are deeply influenced by minerals. Yet few excepting the experts know the kinds and classes of them and their alloys, nor do they know where and how these minerals are used. All this, and more is interpreted in Mr. Voskuil's book.

The advantage of possessing large iron and coal reserves has put the United States in a superior position. The importance of "scrap" is indicated which brings to the memories of some the time it served as a stock trend barometer.

Nations using iron alloys are recorded, their consequential attributes

Reviews

are beautifully set forth. And the exact meanings to be derived from "iron as a productive agent" is well described. With copper and bronze iron has become the "key metal" in modern industry. The development of steel and steel alloys led to machines and a new age.

Nonferrous metals, light metals, chemical and industrial minerals, their worth, benefits for man, and services are carefully explained. Tables are a great help in seeing from whence and to where is the route of minerals for consumption. The detailed stories of the newer metals is impressive.

America's mineral policy and the need for a long range program is of interest. It throws light on much we should know concerning our international trade.

Readers of this book will be both entertained and enlightened for it is not only informative, but delightful as a treasury of information.

INPUT-OUTPUT ANALYSIS: AN APPRAISAL

A Report of the National Bureau of Economic Research
371 pp, $7.50

It has been said that the quantitative analysis of interindustry relations, has absorbed more professional resources than any other field of applied economics. Input-Output analysis shows quantities of demands and satisfactions in each sector to be considered in their relationship to each other. It includes all industries and production, and shows its relationship to every other. Its primary reason for being is to guide the allocation of resources in war time. This can be equally important in making an entire industry survey since soft spots — or strong ones may by this means be envisaged.

Input-output tables depict the output or input of dollars in several industries. Changes in one may indicate changes in another, and in requirements for materials. In the tables all transactions involving sales of products or services are "arrayed in a square" showing their "simultaneous behavior." So every row in this kind of a table indicates the relation of sales and purchases in each other sector. The status of the entire industrial community in relationship to every other is thus portrayed. Or to quote from Wassily Leontief "in it the explanation of what happens in any one part or aspect of the economy is systematically connected with the explanation of what happens in each of its other sectors." The use of so-called open models permits concentration on manufacturing, agriculture, transportation, and distribution, or on different performances of a special industry in several sectors.

The flow of goods, or the lag of some factor, it is claimed, illustrate happenings in their interrelations. Others are as yet unwilling to accept all the assumptions of the system's proponents. They feel there is insufficient proof of its adequacy. They consider a general equilibrium system might be more effective.

For advocates of the Input-Output method key relationships in supply or demand are visualized and essential relationships in productive processes become clear. The entire picture of whatever situation of economic procedure the student wishes to examine, or whose future needs should be estimated, is laid before him. Thus one can easily evaluate. It is thought to be satisfactory when gauging the merit of new industries, especially those whose coming into being will replace other products, which might cause a shift from one item or method to another. There are times when substitution may be of extreme importance. Mathematical methods of compilations are lucidly described. The tables are helpful. Here is a study to which analysts may look for profitable reading.

CHARTING STATISTICS

Mary Eleanor Spear
McGraw-Hill Book Co., 253 pp, $4.50

So many analysts are faced with the problem of charting their statistical findings and at times some are not certain of the correct methods. For them this book will answer several questions. Detailed explanations and ways of defining data are indicated.

Graphic statistics are assuming great importance, so a correct presentation of them is necessary. Different interpretations obtained from arrangements and presentations have come to be part of statistical descriptions, especially when precise and clear interpretations are desired. That a great number of arrangements are possible, each adapted to portrayal of different meanings, makes the ability to present visual situations urgent.

At what level to start charts, and how to allot space for different purposes is well indicated. This should be a valuable book for persons doing their own work or judging that of others.

PLANNING YOUR FINANCIAL INDEPENDENCE

John E. Leibenderfer
University of Oklahoma Press
294 pp, $3.95

More than half of American families do not plan their methods of investing. Sometimes this is caused by neglect, at other times by a lack of knowing how to place their funds advantageously. This may be caused by a lack of information enabling them to reach intelligent conclusions.

Chapter 14 on Investment Fundamentals brings a wealth of simple data and necessary terminology. Investment fundamentals are amply covered bringing ideas of kinds of investments and for what purposes they should be useful. Programs for various family needs are presented. Financial procedure especially with the aim of outlines fitting for different family provisions will be welcomed by many an investor.

Customers having read this book will be much more understanding and far easier to advise. Its coverage is wide including not only investments as such, but plans for spending wisely.

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NEW YORK SOCIETY OF SECURITY ANALYSTS

April 1, 1955–June 30, 1955

Date	*Speaker*	*Topic*
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April 6	R. G. Rincliffe, Pres.	Philadelphia Electric Co.
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April 11	E. S. Hann, Treas.	Kennecott Copper Corp.
April 12	Walter Wheeler, Pres.	Pitney-Bowes, Inc.
April 13	Milton L. Kapp, Pres.	Interstate Power Co.
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April 15	Philip G. Small, Finan. Vice-Pres.	Pacific Inter-Mountain Express
April 18	Donald L. Barnes, Jr., Vice Pres.	American Investment Co. of Illinois
April 19	John W. Hanes, Chairman, Finan. Comm.	Olin Mathieson Chemical
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April 26	W. A. Patterson, Pres.	United Air Lines, Inc.
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June 23	Walter K. Bailey, Pres.	Warner-Swasey Company
June 27	Henry Clay Hofheimer, II, Chairman	Southern Materials Co., Inc.
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SAFEWAY STORES INCORPORATED

Common and Preferred Stock Dividends

The Board of Directors of Safeway Stores, Incorporated, on August 2, 1955, declared the following quarterly dividends:

60¢ per share on the $5.00 par value Common Stock.

$1.00 per share on the 4% Preferred Stock.

$1.07½ per share on the 4.30% Convertible Preferred Stock.

Common Stock dividends and dividends on the 4% Preferred Stock and 4.30% Convertible Preferred Stock are payable October 1, 1955 to Stockholders of record at the close of business September 14, 1955.

DRUMMOND WILDE, *Sec.*
August 2, 1955

10 YEARS OF GROWTH

	1945	1954
PLANT INVESTMENT	$34,517,386	$105,858,428
OPERATING REVENUES	$ 9,812,870	$ 24,636,692
EARNINGS PER SHARE OF COMMON	$1.92	$4.00

Blessed with diversified industry, agriculture and mineral production, Kansas Gas and Electric area has grown substantially and solidly in all fields. "The Core of the Great Plains", a booklet giving the complete story of the area and the company is available at your request... as is our 1954 Annual Report.

KANSAS GAS AND ELECTRIC COMPANY

P.O. Box 208 Wichita, Kansas

YALE & TOWNE
DECLARES 270th DIVIDEND

75¢ PER SHARE

On July 28, 1955, dividend No. 270 of seventy-five cents (75¢) per share was declared by the Board of Directors out of past earnings, payable on Oct. 1, 1955 to stockholders of record at the close of business Sept. 9, 1955.

F. DUNNING
Executive Vice-President and Secretary

THE YALE & TOWNE MANUFACTURING CO.
Cash dividends paid in every year since 1899

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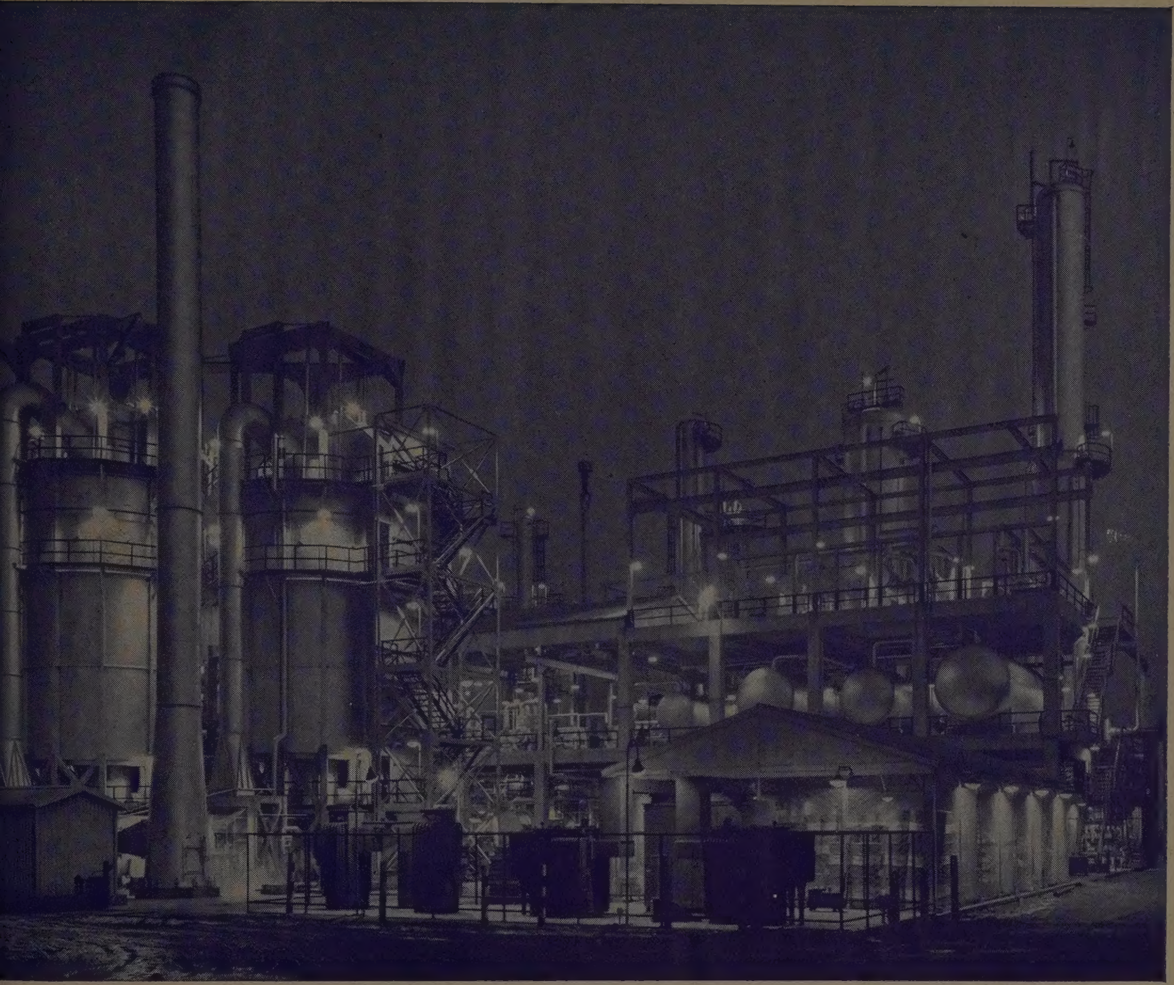


The “New Look” in Refineries

Last month Sinclair Refining Company’s new catalytic reforming unit went “on stream” at East Chicago, Ind. It duplicates Sinclair’s Marcus Hook, Pa. facilities shown above—prototype of the most advanced equipment in catalytic reforming. Still a third unit is planned for Houston, Texas.

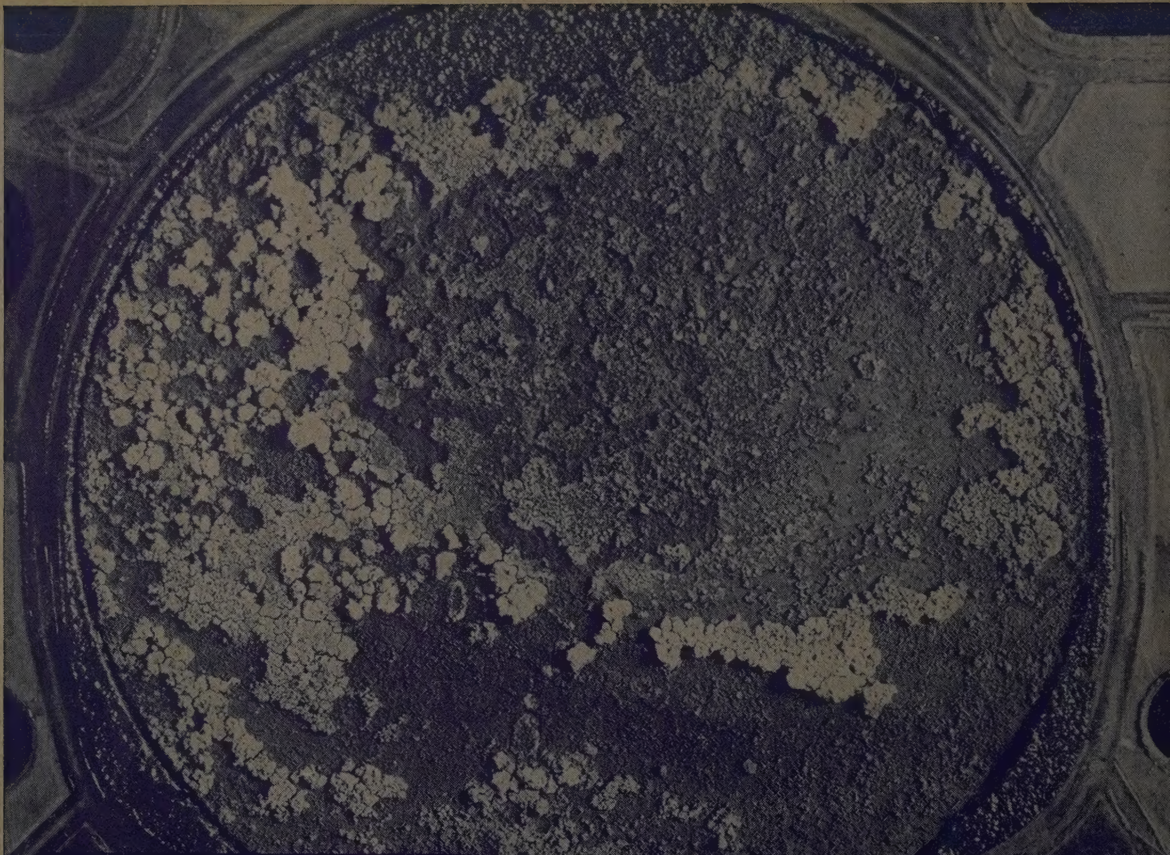
The units use the renowned Sinclair-Baker platinum catalyst, recently hailed as a major advance in refinery science.

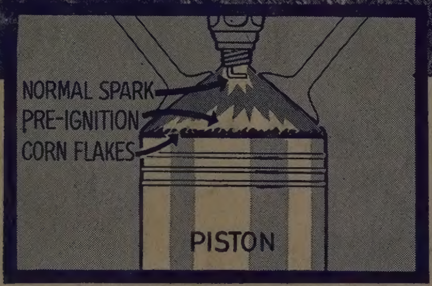
Today, all seven of Sinclair’s refineries are equipped with the latest refining facilities and turn out the finest products of which petroleum technology is capable—higher octane gasoline, aviation fuel base stocks and petrochemical raw materials.

In the last five years, Sinclair has invested more than $100 million in facilities to increase the quality, profitability and volume of its refinery output. The Company’s continuing leadership in refinery techniques is another reason why Sinclair is a Great Name in Oil.

SINCLAIR
A Great Name in Oil

INCLAIR OIL CORPORATION • 600 FIFTH AVENUE • NEW YORK 20, N. Y.





The case of the "corn flakes" in the engine

YOU'RE looking at one of the big problems in the operation of today's high-compression engines . . . "corn flake" carbon deposits on the head of a piston.

These troublemaking deposits tend to build up in modern engines when ordinary oils are used. The edges of these flakes, as shown in the diagram, curl up from the surface of the piston and heat to a red glow, igniting the fuel charge *before* the spark plug fires. As a result, the engine loses power and wastes gasoline.

To many, the only solution to this problem has seemed to be the use of multi-viscosity oils which do not form "corn flake" deposits. But Gulf's research has clearly indicated that this is not a solution, but the beginning of a new set of problems.

Exhaustive tests of leading multi-viscosity oils showed that the thickener used to bolster the viscosity of these oils forms heavy deposits on intake valves. It also starts to break down within as few as 25 miles of service so that the oil loses its efficiency.

So Gulf chose to go the "single-range" route with a new motor oil, in three specific grades, that controls carbon. This completely new oil has *natural viscosity.* That is, it contains *no* artificial thickeners that break down in service.

New GULFPRIDE H.D. SELECT is super-refined by Gulf's exclusive Alchlor Process to refine out unstable hydrocarbons, commonly present in motor oil, that cause sludge, "corn flakes," and other objectionable deposits. It assures lower oil consumption than the multi-vis "all season" oils and provides the toughes protective film ever developed in a moto oil.

New Gulfpride H.D. Select Motor O is another example of how Gulf is con stantly developing new and better prod ucts for the benefit of the public it serves

GULF

Gulf Oil Corporation • Gulf Refining Compan
General Offices, Pittsburgh, Pa.